Nursing Homes and Hostels with Care Services for the Elderly

Design Guidelines

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Canada Mortgage and Housing Corporation
Société canadienne d'hypothèques et de logement

Honourable Elmer MacKay
Minister

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Preface

The proportion of elderly in our society will continue to increase for at least the next 50 years. Under the terms of the National Housing Act (NHA), CMHC has financed a growing number of housing types for the elderly, including nursing homes and hostels with care services.

Although the NHA recognizes nursing homes and hostels as housing alternatives for elderly persons who require care, the terms of reference of the Act apply only to the residential component of such institutions. Because of the lack of a single, clear definition of residential, personal care and health care components, CMHC has found it necessary to establish design guidelines in order to determine appropriate social housing policies.

The demand for guidelines has come from CMHC field staff, service agencies, private citizens and architects, as well as from provincial government authorities. A number of provincial and municipal governments have legislation dealing with nursing homes and hostels for the elderly. This legislation is recognized and is not altered by the CMHC guidelines.

The Toronto firm of A.W. Cluff and P.J. Cluff, architects and planners, were engaged as consultants by the Corporation in 1977. Research and production were carried out under the direction of Pamela Cluff. This document is the result of that research.

In the preliminary research, the consultants carried out a cross-Canada survey of existing facilities built under sections 15.1, 40 and 43 of the NHA through a mailed questionnaire and selected visits.

A comprehensive "state of the art" review resulted in an annotated bibliography and 11 working papers, including a comparative legislative review and regional summaries of the mailed questionnaire.[1]

In addition, regional CMHC offices, ministries of housing, health and social services in six major centres across Canada were visited and consulted, in order to obtain both national and regional views.

Thus the final document is a compendium of information from a variety of sources. It both extends and amplifies the work prepared by CMHC in their two previous volumes, *Housing the Elderly* and *Housing the Handicapped*.

Part I gives a summary of the needs of the elderly and outlines a philosophy of care. Part II deals with the functional and programming needs of facilities for the elderly. Part III presents the major architectural considerations, while Part IV deals with design details.

The main purpose of this document is to provide the elements of good design, based on a sound philosophy. It is intended to stimulate, not prescribe solutions. The authors hope that it will be a useful reference for all those wishing to provide shelter for the elderly in a group setting.

Pamela Cluff
December 1978

Comments and suggestions are invited on this subject; they should be addressed to:
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[1] See References, page 90.

Acknowledgments

Canada Mortgage and Housing Corporation wishes to acknowledge that the research and preparation of *Nursing Homes and Hostels with Care Services for the Elderly: Design Guidelines* was conducted by Pamela Cluff, architect.

All phases of the project were supervised by a CMHC review committee. The project co-ordinator was Jean-Rémi Champagne, architect, Standards Division, Professional Standards and Technology Directorate (PSTD), CMHC National Office.

Consultation on regional issues was furnished by CMHC regional officers in all provinces and the Yukon and by federal, provincial and municipal authorities having jurisdiction in housing, statistics, health, welfare, and community and social services. Credits are given in the working papers and the bibliography, which were prepared as monographs. The monographs are not published but they are available for consultation at the Professional Standards and Technology Directorate Library, CMHC National Office.[1]

During the course of research, many specialists in gerontology and geriatric medicine in Canada and the United States gave freely of their advice and experience. Credit is noted in the monographs.

Information for graphics has been derived from a variety of sources including

- CMHC publications *Housing the Handicapped* and *Housing the Elderly*,
- *Building Standards for the Handicapped 1977: Supplement No. 5 to the National Building Code of Canada*,
- *Designing for the Disabled* by Selwyn Goldsmith,
- *Anthropometric data* by Henry Dreyfuss,
- *The North Carolina Illustrated Code*, and
- *The American Institute of Landscape Architects Handbook on Barrier-Free Site Design*.

Material was supplemented and modified by the consultants to produce a uniform metric reference. All dimensions are expressed in millimetres unless otherwise noted.

Slides of existing facilities funded under the terms of the National Housing Act were taken by the consultants to illustrate design issues. These slides are not published but they are available for consultation at the PSTD Library, CMHC National Office.

Diagrams and drawings reproduced on page 26, 27, 28, 29, 32, 34, 36, 40, 41, 42, 43, 47, 66, 67, 69, 70, 72, 73, 74, 75, 76, 77, 78, 79, 80 and 81 are taken from Designing for the Disabled by Selwyn Goldsmith RIBA and are the copyright of RIBA Publications Ltd. London. They may not be reproduced without the permission of the copyright holder.

[1]A list of the monographs is included in these guidelines under References. Photocopies are available at cost from the librarian.

Part I
Philosophy of Care for the Elderly[1]

The Population in Need

It is generally accepted that the number of elderly persons in Canada will increase, not only in real numbers but as a proportion of the total population, during the next 50 years. Gerontological research has established that there are three distinct groups of elderly persons sixty-five years old and over:

1. the "young old", aged 65 to 74;
2. the "middle old", aged 75 to 84; and
3. the "old old", aged 85 years and over.

These three categories of elderly generally demonstrate distinct and identifiable characteristics.

The Young Old

The "young old" often vary only slightly from many persons of middle age, except it is likely that they are retired from the work force and live as a couple or alone, rather than with their children.

Many of the elderly in this group are alert, independent and active unless they have suffered some major health or functional loss or have recently been widowed. Only then do they seek support from the caring and health professions, supplementary income, or alternative shelter. It is important that this group be perceived as individuals capable and desirous of independent action, still strongly linked to community and family.

The Middle Old

In the years between 75 and 85, elderly persons who have survived without major health losses will usually begin to be affected by the health and acuity losses often associated with the stereotype of old age. Additional social and psychological losses are sustained as friends die or family move away. These losses are often exacerbated by a lower income. The typical elderly person in this age bracket is likely to be female (the national average is two-thirds), living alone on an old-age pension, and suffering from some or many physical and sensory losses.

During this critical decade, most elderly persons begin to need care and community support. Those who have suffered from a number of losses may also need a sheltered environment where they can be assured of personal care (health monitoring and supervision) as the need arises.

The Old Old

Persons over 85, for the most part, have overcome many crises during the two previous decades. Some will have survived with resilience and skill, thereby maintaining their independence. Many more, however, have suffered increasing losses in health, mobility, sensory acuity and well-being and may need a variety of care services, including sustained health care. The care needed may be supervisory, personal or dietary, or it may be in the area of mobility, continence, drug therapy and orientation. The concerns most frequently voiced by the elderly themselves are for assistance with shelter, income and maintenance of everyday skills as well as health care.

This category of aging includes the majority of elderly persons who seek shelter with support services of the kind outlined here. The average age of elderly persons in facilities of this kind is currently 83; life expectancy, however, has improved in the last 25 years and we can anticipate that facilities offering personal care, nutritional and health care services will be serving a growing proportion of "old old" in the next decade.

Gerontologists are increasingly demonstrating through practical research that elderly persons who are required to move each time their health or personal needs change suffer some degree of trauma. In some cases such moves are critical and death may result.

Undoubtedly there are limits to a person's capacity to accept and adapt to change, especially during the vulnerable years with which we are concerned. Policies which recognize and anticipate increasing losses during the aging process, therefore, will be prepared to accommodate those losses as they occur.

[1] A profile of the elderly currently housed in special housing for the elderly across Canada is included in Part II, pages 7-9.

It should be noted that in many instances young physically-handicapped adults are located in facilities for the elderly, due to the lack of residential and care alternatives. It is well documented that younger adults have little in common with the "middle old" and the "old old" and it is to be hoped that suitable care and shelter alternatives will be found for this sector of the population.

Appropriate Environments

Facilities offering care services have long been identified with the medical model, both in buildings and management style. The resulting solutions and programs have frequently been characterized by a patronizing approach to the elderly which manifests itself in many ways, some blatant and some subtle. Few environments have been created to meet the needs of the elderly as individuals.

Changing perceptions of the elderly and their needs require that we respond by designing shelter and care services that offer the individual dignity, privacy, independence and care as it is needed along with the financial, social and psychological support required to maintain a sense of self-worth and purpose and the ability to function.

Too many elderly people live out their years in anxiety and hopelessness, forced to relinquish not only personal possessions but social status as well. Our "caring" society has been both paternalistic and authoritarian in the solutions it has prescribed for those in need. This has resulted in facilities that are inappropriate in scale, often isolated socially and planned with economies of construction and management as predominant criteria.

The growth in almost all provinces of care services for the elderly in the community, reflects both a recognition of the social benefit of maintaining the elderly in their own community and a belief that economies can be achieved by serving a large sector of the elderly population outside institutions.

Regardless of the motivation, in the implementation of these policies and the solutions and programs that result, a significant number of "middle old" and "old old" will continue to require a group-living setting with shared personal care services and access to health care services.

The solutions addressed here include hostels for the elderly and nursing homes with care services. (See Part II, Definitions of Nursing Homes and Hostels.)

Scale

The scale of the facility should be appropriate to the community context as well as fulfilling management, staffing and economic criteria. Facilities that offer higher levels of care are often designed as an aggregation of self-contained, specialized service units.

A typical module might house 25 to 35 persons depending on the level of care being offered (25 per nursing unit).

Facilities with fewer than 30 units have generally proven too small to ensure adequate program options, and to achieve an economic ratio between the shelter component and supplementary areas. At the other end of the scale, facilities that accommodate more than 150 to 175 residents can become impersonal, without enough interaction between residents and staff. These large facilities are usually constructed on more than one level and therefore require elevators.

In all solutions, social groupings of 10 to 15 persons seem to produce the best opportunity for social interaction and for enhancing the individual resident's sense of well-being. Such groupings need to be created on a residential scale. The intrusion of traditional concepts of health care can negate the desired atmosphere. Another harmful influence may be the construction and safety requirements of local building and occupancy codes which tend to enhance institutional qualities.

Policy

As of June 1978, CMHC will finance only the capital costs of the shelter component of nursing homes and hostels.

The degree to which care services are introduced into such facilities will be the result of cooperation between the sponsoring group and provincial or municipal departments of health and social services.

Guidelines

These guidelines are presented to all those concerned with providing shelter with care services for the elderly. Three levels of care are addressed: Levels I, II and III as defined by the federal Department of Health (See Part II, Definitions of Levels of Care, page 5.)

The five levels of care approved by the Federal/Provincial Advisory Committee on Health Insurance in November 1973, and now used by Health and Welfare Canada for purposes of planning, development, administration and research, may be described briefly as follows:

I Residential, ambulant or limited personal care (intermediate nursing care less than 1-1/2 h per day in Ontario).

II Intensive personal care with nursing supervision or nursing home care (extended care more than 1-1/2 h per day in Ontario, intermediate care in B.C.).

III Extended care in a chronic care unit or hospital.

IV Special care for a stable disability in a rehabilitation centre or hospital.

V Acute care of seriously or critically ill in a hospital.

The intent of current CMHC policy is to provide capital assistance for the shelter of elderly persons who predominantly require Level I and Level II care. However, our research has shown that facilities built to accommodate only these levels of care need to adjust to Level III as the residents age. Facilities should be adaptable to changing care patterns without costly physical modifications.

Therefore, the planning and construction of new facilities must accept the rationale of changing needs among elderly residents. Although all the anticipated care components need not be included in the initial phases of construction, a comprehensive master plan should be a pre-requisite. Such a master plan should include an outline of the functional program of the facility, and an architectural program that reflects the changes anticipated in care services over time.

Hostels

Hostels for the elderly have been built in many provinces, most often to house the "young old" and in some cases a proportion of "middle old". Such buildings have varied in scale and design, but for the most part have been established to house the healthy elderly and some Level I residents. While relatively successful in their opening years, these buildings have rarely proved adaptable to the changing needs of the elderly. Research has shown that they offer only an interim solution. Other disadvantages include a requirement for group dining, with little or no option. This factor alone has proved to be a managerial and economic stumbling block. Elderly persons have found that facilities offering only group dining rarely offer sufficient financial benefit to offset the loss of independence and reduction in private living space. The high turnover and poor renting patterns in such facilities demonstrate that the elderly prefer to take their chances in the community in a rooming house or apartment, or in a home they own, where they can maintain at least the semblance of independence as well as social and family contacts.

Facilities with only Levels I and II care may be appropriate when they are planned in conjunction with a multi-level care facility, or are designed for specific population groups, e.g., elderly males in northern communities.

Nursing Homes

Research has shown that there is no single concept of a nursing home with care services for the elderly. Each province uses a variety of solutions, from group facilities offering three or more levels of care, to facilities that are a collection of apartments or bedrooms (in the general category of homes for the aged) sometimes offering Levels I and II care and sometimes including higher levels of care.

Depending on the province in which they are located, provincial standards and available financial supplements, these facilities offer care ranging from purely residential and supervisory to full health care, frequently in conjunction with a hospital.

Facilities that have overcome the negative effects on the elderly of relocation include facilities such as a Level I and II care facility using shared administration, activity areas, food services, laundry services and housekeeping.

Staffing

Staffing patterns are a product of the health of residents, the economic policies affecting delivery of care services, and allowable per diem rates, as well as the financial supplements available for social or health services.

Programming

Programming, like staffing, is affected by provincial policies, space available for activities and community resources. There is a growing trend across Canada to introduce most social programming and activities in all types of care facilities, frequently relying on community and volunteer resources. Although some provinces are committed to a high level of program implementation, there is little consistency nationally in the quality of such programs.

Siting can influence the opportunities for programming both positively and negatively (e.g., a remote site does not encourage volunteer, part-time staff or family involvement). The most successful programs appear to be those in which the community is encouraged to participate, through use of part of the facility as a senior citizens' centre, or as a day-care centre for seniors. These are most likely to be in urban areas where good transportation and volunteer participation are assured.

Expectations

The elderly residing in care facilities in Canada today were born in the late 1800s or around the turn of the century. They came from rural backgrounds and immigrant families. Their life experience has been limited by their education, income level, work opportunities, two world wars and the Depression. Although in the last 20 years they have become better informed through the media and travel, they are not as well informed as future generations of elderly are likely to be.

Education, information, diversity of experience and urbanization will all have their effect on the elderly of the future. The greatest impact will be a significant rise in expectations for achievement and independence. The population to be served will be well-informed, vocal and political and represent a growing proportion of our population.

It is these elderly persons of the future with whom we are concerned and to whom this guideline document is dedicated.

The design guidelines presented here indicate the minimum performance expected but not the maximum. It is anticipated that prevailing provincial standards will be interpreted with these basic performance criteria in mind. Feedback from users will allow the authors to continue to improve the guidelines.[1]

[1] A list of suggested reading material relevant to Part I is included on page 91.

Part II
The Issues

Definitions of Nursing Homes and Hostels

Nursing Homes

Nursing homes can be defined in terms of function, length of stay, condition of the resident, care given, staff requirements and facilities provided. The nursing home's primary function is seen to be the provision of accommodation on an "extended basis." Accommodation of this kind is made necessary by the nursing home resident's need for personal care. This care may include help with dressing, grooming, bathing, eating and "services such as help in walking, getting in and out of bed." It also commonly includes medical help in the form of special diets, medication and dressings, and restorative and recreational services. When these forms of aid are beyond the ability of the resident and his family and friends to provide, accommodation with services is required.

The average stay in a nursing home is four years, with a growing tendency to even longer periods. By contrast, the average length of stay in a hospital is seven to nine days. This difference is crucial and underscores the importance of a residential environment in long-term care facilities.

Hostels

CMHC has defined hostels as boarding residences, which offer meals but no services, care homes, group homes and halfway houses.

A hostel may also be described as independent-living group accommodation for the elderly, in which there is sharing of one or more facilities such as dining room, kitchen, bathroom or living room, with or without minimal care services. Hostels do not necessarily offer more intensive levels of care although usually more on-site services and facilities are available. This form of support for the elderly in which the bedroom area is supplemented and balanced by planned living areas, where the normal activities of daily living can be enjoyed, represents a fairly new architectural and sociological approach.

Definitions of Levels of Care

The following definitions of levels of care are based on classification standards of the Federal Provincial Advisory Committee on Health Insurance.

Level I (Residential Care or Personal Care)

Definition:

"Required by a person who is ambulant or independently mobile, who has decreased physical or mental faculties, and who requires primarily supervision or assistance with activities of daily living and provision for meeting psycho-social needs through social and recreational services. The period of time during which care is required is indeterminate and related to the individual condition."[1]

The characteristics of residents requiring Level I care are as follows:

- The resident's condition is known to be stabilized or under control.
- The person has one of the following:
  a) physical or mental frailty,
  b) congenital handicap,
  c) disability due to previous illness or injury.
- The person should be independently ambulatory (with or without mechanical aids) or independently mobile in a wheelchair.
- The person is limited physically or mentally in his ability to care properly for himself independently.
- The care required is primarily supervision and assistance with activities of daily living.
- The treatment, if any, is standardized and includes physical maintenance, medication and preventive services.

Provision of Care:

The focus of care, in programming terms, is primarily to encourage and to maintain independence in the activities of daily living and to meet the psycho-social needs of the individual. This is a preventive care social program.

[1]Federal/Provincial Advisory Committee on Health Insurance, November 1973.

In addition to basic living requirements such as room, board and laundry, provision is made for:

- Responsible supervision with access to periodic medical care, and professional nursing services as required.
- Personal care and assistance with activities of daily living.
- Provision of special diets.
- Supervision of medication.
- Social and recreational opportunities.
- Aids and equipment for activities of daily living (e.g., handrails, grab-bars and walkers, etc.)

Level II (Extended Health Care or Intermediate Care)
Definition:

"Required by a person with a relatively stabilized (physical or mental) chronic disease or functional disability, who, having reached the apparent limit of his recovery, is not likely to change in the near future, who has relatively little need for the diagnostic and therapeutic services of a hospital, but who requires availability of personal care on a continuing 24-hour basis, with medical and professional nursing supervision and provision for meeting psycho-social needs. The period of time during which care is required is unpredictable but usually consists of a matter of months or years".[1]

The characteristics of those requiring Level II care are as follows:

- Diagnosis has been established.
- The patient has a chronic disease or a functional disability.
- As demonstrated by previous assessment and response to treatment, there is little or no potential for rehabilitation.
- The disease process is relatively stable.
- There is a limited need for diagnostic and therapeutic services.
- The individual's need is primarily for personal care, available on a continuing basis, with professional nursing supervision, limited skilled nursing techniques and medical services appropriate to the patient's needs.
- An extended period of care is anticipated; i.e., the patient's condition is not expected to change significantly in the near future.

Provision of Care:

The focus of care is a reactivation and maintenance program with medical and professional nursing supervision, which aims to maintain the health status and functional capacity of the resident. The program should encourage and maintain independence in the activities of daily living, and meet the psycho-social needs of the resident.

Reactivation implies stimulation of the resident so that physical, mental and social abilities are brought to the optimum level and maintained.

To meet the psycho-social needs of the individual, administrative policies and programs must ensure the involvement of the resident staff, family and community.

In addition to basic living requirements such as room and board, provision is made for:

- Continuous care with medical and professional nursing supervision.
- Limited skilled nursing techniques.
- Mechanical aids for patient care, such as grab-bars, wheelchairs and walkers, etc.
- Social and recreational services.
- Part-time consultant physiotherapy and occupational therapy service.
- Special diets.
- Drugs and medical supplies.

Level III (Chronic Care or Extended Care)
Definition:

"Required by a person who is chronically ill or has a functional disability (physical or mental) whose acute phase of illness is over, whose vital processes may or may not be stable, whose potential for rehabilitation may be limited, and who requires a range of therapeutic services, medical management, and skilled nursing care plus provision for meeting psycho-social needs. The period of time during which care is required is unpredictable, but usually consists of a matter of months or years."[1]

[1]Federal/Provincial Advisory Committee on Health Insurance, November 1973.

Characteristics of residents needing Level III care are as follows:

- The diagnosis is established.
- The patient has a chronic illness or disability.
- The acute phase of illness is over or is subsiding.

And one or more of the following conditions must exist:

- The patient has potential for rehabilitation which can best be realized through a slow-paced program.
- The disease process requires medical management to achieve clinical control.
- There is evidence of significant change currently occurring in the patient's condition, i.e., improvement, relapse, or deterioration of the progression of disease.
- There is a need for nursing care with professional nursing supervision on a continuing 24-hour basis.

Provision of Care:
The focus of care should be a coordinated, multi-disciplinary, rehabilitation-oriented program for the treatment, care and rehabilitation of chronically sick residents. It should provide a treatment plan for each patient adjusted to his needs, functional capacity and potential, and is intended to improve and maintain functional capacity.

Rehabilitation potential indicates that recovery of function or independence in activities of daily living is possible, at least to a degree. It is essential to recognize the importance of minor degrees of independence.

In addition to basic living requirements such as room and board, with diagnostic services available, provision is made for:

- Skilled nursing service and medical management.
- Therapeutic services such as physiotherapy, occupational therapy and speech therapy.
- Social and recreation services.
- Special diets.
- Pharmacy services.
- Medical supplies.
- Mechanical aids for resident care, e.g., mechanical lifts or high-low beds, as well as specialized therapeutic aids.

User Characteristics

The Aged Population

Development of residential care facilities for the elderly must begin with an examination of the special needs and characteristics of aging people, in particular with the continually changing nature of those needs.

In any one person's term of residence in a nursing home or hostel, it can be expected that his or her health will deteriorate, and that the service and care needed by that person will change. Shelter for the elderly, therefore, must be designed for the range of their capabilities. Facilities should be able to accommodate active, mobile persons as well as those whose physical abilities will only allow them to use certain areas within the facility.

The age group 65 years old and over will be the fastest growing segment of the population in the coming years, and will continue to increase at a much higher rate than the total population. By the year 2000, the age group over 80 will have increased 130 per cent.

Financial Status

A pervasive characteristic of our aged population today is a low income. In 1975, 35 per cent of the elderly persons in Canada had an income below $2 999. The situation is generally worse for elderly women than for men. Women have a longer life expectancy than men and they outnumber men in the general population. In residential care facilities, the ratio is usually two female residents to one male resident.

Physical Status

As a rule, only a small proportion of the residents in facilities for the elderly are severely disabled (excluding chronic or extended care institutions). Although nearly half the residents can be expected to require some help with hygiene and personal grooming, few will require feeding or bed care. Half or more will be independently mobile, and will be able to take part in recreational and social activities.

Physiological characteristics of aging persons include:

- Changes in posture and height and a loss of muscle power affect the body's efficiency and ability to perform daily tasks.
- Changes in motor performance result in hesitancy, and slower responses and mobility.
- Changes in the nervous system include a decrease in tactile discrimination, speed of reflexes and recovery of balance, and some impairment of short-term memory.
- Vision becomes less accurate, adaptation to light change is slower, peripheral vision is reduced and sensitivity to glare increases. At the same time, the elderly person becomes more dependent on visual cues as other senses deteriorate.
- Changes in sensory acuity include losses in vision, hearing, speech, smell, taste and touch. Elderly persons do have the capacity to compensate for perceptual losses, and environments can be designed to support this adjustment. Individuals can also learn to cope with a reduced sensory environment.
- Changes in mental acuity include loss of memory (particularly short-term), disorientation in time and place, loss of ability to do simple calculations and reluctance to adjust to change. These may result in substantial changes in behaviour, and may require support and supervision by the staff.

All of these physical changes imply a reduction in the residents' control over their environment. While other types of users may easily overcome an inappropriate environment, an elderly person's whole lifestyle may be limited by the distance between his or her room, interior and exterior areas of activity on the site, etc.

Institutionalization and Changes in Status

The social and psychological needs of the elderly in residential care facilities also differ from those of the general population.

One of the greatest difficulties for the aging is learning a completely new set of roles. The previous social roles of worker, parent, spouse, homemaker, citizen and friend change or are ended, and this may contribute to a serious erosion of self-respect. In addition, entering a residential care facility represents a drastic change in lifestyle, and is a traumatic experience for many.

The lack of privacy and independence, forced interaction with strangers, regimentation of activities and social isolation give rise to profound insecurity, feelings of abandonment and depression. The overriding effect of institutionalization is a change in status from an independent adult to a dependent child.

Designers and administrators should try to create a physical environment and a psychological atmosphere that enhance the image of the elderly resident as an individual, with rights for self-direction. Relations between staff and residents and among the residents themselves, adequate programs and services, and the physical environment itself can work together to create this atmosphere.

Psychological Status

Certain basic psychological needs are as important as care and shelter needs for the elderly:

- Sensory experience: necessary for all human beings to maintain well-being. For the elderly, the use of a number of different sensory information systems augments failing senses.
- Tactile and kinesthetic stimulation: a highly tactile environment can compensate to some degree for reduced opportunity to touch and be touched.
- Interaction with others: a lifelong need, though the degree varies among individuals. Choice of the amount and kind of interaction should be available.
- Privacy: well-being and good functioning depend on having adequate privacy. The physical environment plays an important role in creating opportunities for privacy.

- New experience: variety is essential to good functioning and alertness, particularly for the elderly, whose lives may be more routine.
- Predictability: a balance must be struck between new experience and the security of familiar patterns.
- Self-esteem: essential for personal well-being. The assaults of aging on self-esteem are many.
- Autonomy: independence and self-direction are essential to maintaining self-esteem but are possible only where choices exist.
- Meaningful activity: as opposed to busy work.
- Defined social norms: dependable means of identifying the feelings and expectations of others, relative to oneself.
- Temporal orientation: time is the framework of adult life, and it is essential to be able to keep track of time and relate to temporal changes.
- Reflection: throughout life, but particularly in old age, the opportunity to reflect on the past is necessary as a way of understanding oneself.

Designing for Elderly Users

If a residential care facility is to be an appropriate living environment, it must shape itself to the special characteristics of its users. While staff convenience is a necessary goal, the primary objective must be the satisfaction of residents. A number of factors must be considered in designing for the elderly user:

Scale: decreasing mobility limits a resident's range of travel in a facility. Long corridors without resting places are unmanageable. Mobility problems also increase the amount of seated activity or the use of a wheelchair.

Complexity: uncertainty and reduced perceptual acuity can cause confusion and disorientation. Large facilities can be divided into small, easily distinguishable groupings through the use of colour, texture and other orientation devices. In interior design, the use of uncomplicated shapes and effects need not mean that richness or visual interest are sacrified.

Support: a therapeutic environment is one in which the physical setting is designed to compensate for the decreasing capabilities of residents. Fixtures should require minimum dexterity and strength. Direction cues should be large and clear. Opportunities for casual social interaction should be available near resident rooms.

Security: elderly persons often become concerned with the security of their environment. They must feel safe from threatening contacts with which they cannot cope. Security also includes supervision of residents who require it.

Territory: each resident must be able to establish a personal claim to some area within the facility (usually the bedroom), and must be able to exercise the right of privacy over it.

Encouragement: the physical environment can either hinder or support the regular daily activities. A warm, inviting, receptive atmosphere can be created, as opposed to a sterile, forbidding one.

Exercise/activity: continued physical activity can help the elderly maintain their ability to function. The environment can encourage activity by providing specific exercise and activity areas, at manageable distances which residents willingly negotiate.

Range: the physical world that can be managed by the elderly, with their reduced physical capability, shrinks drastically. It may be reduced to a building, a site or a small surrounding area. The range of the individual will vary from the home base. Each component, including building, site and adjacent community, should be designed to be supportive and with these reduced capabilities in mind.

N.B.: See Part II, Definitions of Nursing Homes and Hostels, page 5.

The Care Component

The level of care offered will to a large extent determine the amount of space required for the care components. The space requirements of various care programs are described in Part III.

Existing Experience

According to a review of existing care facilities for the elderly in Canada[1], the most frequently included health care components are:

- Physiotherapy area
- Occupational therapy area
- Doctor's office
- Examination and/or treatment room
- Sick bay
- Isolation bay
- Quiet room
- Morgue (occasionally)

The most frequently included personal care areas are the following:

- Beauty and barber shop
- Resident's kitchenette
- Residents' laundry
- Assisted bathing areas
- Assisted toilet areas
- Assisted recreation and activity areas

Other areas common to the majority of facilities may be generally defined as:

- Activity areas of all kinds
- Administrative areas
- Housekeeping and maintenance areas
- Community resource areas
- Storage

[1]"Monograph No. 10: Cross-Canada Survey," March 1978 and "Monograph No. 11: Cross-Canada Survey of Nursing Homes and Hostel Facilities. A Data Analysis." March 1978.

The personal care services most frequently provided in the facilities that were reviewed consisted of assistance with:

- Dressing
- Bathing
- Use of toilet
- Grooming
- Eating
- Mobility
- Housekeeping
- Laundry
- Use of activities' facilities
- Self-maintenance
- Transportation
- Obtaining information
- Personal affairs
- Orientation
- Use of communication apparatus
- Medication

The design and use of space for these services are affected by the following related issues:

- Staff ratios
  - Full-time
  - Part-time
- Staff complement
  - Personal care
  - Paramedical
  - Others
- Dietary needs
- Community support
- Family support
- Use of volunteers
- Transfer options for residents
- Funding options and policies
- Legislative options and policies
- Care options in community
- Available health care services and/or personnel
- Shared facilities

Areas related to personal care services included:

- Bedroom
- Washroom
- Bathroom
- Communal dining areas
- Central kitchen
- Central laundry
- Exercise areas
- Beauty/barber shop
- Activity areas
- Occupational therapy
- Counselling offices
- Special equipment storage
- Housekeeping areas
- Nursing office
- Personal care staff areas

The health care services most frequently provided in the facilities that were reviewed consisted of:

- Nursing care
  - Acute care
  - Short-term
  - Long-term
- Medication (drug therapy)
  - Occasional
  - Regular
- Treatment
  - Occasional
  - Regular
- Physiotherapy
  - Occasional
  - Regular
- Health
  - Occasional
- Monitoring
  - Regular
- Functional assessments
- Rehabilitation
  - Functional
  - Vocational
  - Reality orientation
- Special services
  - Ophthalmology
  - Psychology
  - Psychiatry
  - Therapeutic diets
  - Prosthetics and aids
  - Podiatry

The design and use of space for these services are affected by the following related issues:

- Staff ratios
  - Full-time
  - Part-time
- Staff complement
  - Nursing
  - Paramedical
  - Personal care
  - Others
- Special facilities for therapy and treatment
- Special dietary needs
- Community services and/or alternatives
- Use of volunteers
- Use of special consultants
- Shared service options
- Funding options
- Legislative options
- Staff training areas and programs

Areas related to health care services included:

- Nurses' station
- Drug storage and preparation
- Sick bay
- Examination and treatment rooms
- Doctor's office
- Physiotherapy area
- Consultants' offices
- Training areas for health care staff
- Therapeutic bathing
- Institutional bathroom
- Assisted wheelchair shower
- Morgue
- Quiet room
- Day care centre - assessment and treatment areas (as above)

The Shelter Component

In order to qualify for CMHC funding, the residential component of a nursing home or hostel should be limited to those spaces identified in the matrix and space guidelines, plus complementary staff and activity areas essential to the operation of programs for well elderly residents.

Existing Ranges

A review of existing care facilities for the elderly has shown that the total area per resident (including grossing factors i.e. pro-rated non-accountable spaces such as wall thicknesses, stairs, shafts) varies considerably. The following ranges have been found:

Hostels (residential) - 32.5 to 45.0 m^2
Hostels (with care) - 42.0 to 65.0 m^2
Nursing homes (residential) - 32.5 to 42.0 m^2
Nursing homes (with care) - 39.0 to 56.0 m^2

Variables

Where a senior citizens' community component is included, e.g., a drop-in centre or a day care centre, these areas may be increased significantly.

Where residential units provided under the term hostel, are designed as bachelor units or 1-bedroom apartments, complete with en suite services, the gross area per unit could go as high as 67 m^2 (excluding community components).

Where residential units provided, under the term hostel, are single room or shared rooms with no en suite facilities, this figure could be at the low end of the scale (excluding community components).

The number of single beds, shared washrooms, etc., will affect the gross area per resident.

The size of the facility, i.e., number of beds, will to some extent determine both the programming and staffing issues.

The amount of ancillary space required for social programming, etc. will largely by determined by the community according to need, local practice and regional standards.

The amount of internal circulation space, both horizontal and vertical, the width of corridors, etc., will affect the gross area per resident.

The shelter requirement is clearly identifiable for the following basic functions in daily living:

General living activities
Sleeping
Eating
Toileting
Bathing
Grooming
Self-maintenance
Housekeeping
Food preparation
Laundry
Exercising
Socializing
Visiting
Entertaining
Communicating
Learning
Relaxing
Shopping

The design and use of spaces for these functions is affected by the following related issues:

Health monitoring
Physical functioning
Physical maintenance
Diet monitoring
Personal affairs
Activities
Leisure
Community interaction
Family
Income
Transportation
Safety
Spiritual needs

The functions listed above were generally carried out in the following living spaces in the facilities that were reviewed:

Living room
Bedroom
Washroom
Bathroom
Dining areas
Personal storage
Personal laundry
Personal cooking
Recreation areas
Meeting areas
Lounge areas
Activity areas
Visitors' areas
Library
Chapel
Snack bar / tuck shop
Patio/garden

General Implications for Design and Programming

Negative Concepts Associated With Institutional Facilities

Like others entering a group living situation, elderly persons are afraid that they will lose their privacy and independence. Institutional living in the past has been characterized by regimentation, forced interaction and loss of choice. Fear of such settings has been compounded by historical stereotypes, wherein such facilities were seen as warehouses for those awaiting death.

Authoritarian management styles, segregation of the sexes, large wards and shared living space have fostered these fears.

Implications for Design and Programming

Facilities that will alleviate these fears and meet the needs of future residents should be conceived so that the building, its setting, and its program all work to counteract the historical stereotypes.

Space should be scaled for residential activity in small groups, with opportunities for involvement or retreat to personal privacy. Communal areas should be adaptable to a variety of functions, both planned and spontaneous, for diverse groups of residents.

The community should be encouraged to participate in the day-to-day activity of the facility through programs serving both residents and the community, through day-care programs, senior citizens' clubs or outreach service programs.

Community organizations, agencies and care services brought in from off-site should be encouraged to support and supplement on-site services.

Visitors, family and volunteers should be encouraged to take part in the activities of the facility, giving residents continuity with their previous experience.

Residents should be encouraged to continue their previous lifestyle in socializing, dress, eating habits, mobility, communication and activities.

Staff should be encouraged to interact with residents as individuals rather than as a group to be serviced and housed. Management style should be open, democratic and amenable to change.

The facility should be designed to be supportive of residents whose functional abilities are limited. This will include barrier-free access, orientation devices, sensory stimuli, auditory stimuli and a pleasant, varied organization of space. Colour, texture, fabrics, furnishings, signs and planting should be used to reduce uniformity and increase opportunities for individual identification with personal and public areas.

Daily activities should follow time patterns appropriate to residents, e.g., meals, bathing, occupational therapy, recreation, etc., but should not be so rigid that no variation is possible.

Health care and health monitoring, as well as assistance with the activities of daily living, should be available to residents as they need it.

Other professionals should be available to help with personal and other problems as they arise.

Residents should be made to feel that they have a right to make personal decisions about the use of their time and should retain their independence, at the same time feeling assured that care is available when needed.

Residents should feel that they have the right to manipulate their personal domain, and retain such personal possessions and furnishings as can be accommodated.

The resident should be shown respect as an individual and should not have to relinquish privacy or be compelled to subscribe to the goals of the group.

Implications for Siting[1]

Site Selection and Analysis

Wherever possible, design professionals should help the client with site selection and site analysis before the final decision to acquire land is made. In some cases, however, property may already be owned by the client, or the client may purchase land before selecting the architect.

In general, an analysis of the site or potential site should be undertaken, bearing the following issues in mind:

- Location
- Size
- Zoning and other site constraints
- Neighbourhood context
- Site amenities
- Topography and special features
- Soil conditions
- Orientation
- Site services
- Roads and access
- Transportation, public and other
- Cost
- Sub-surface conditions
- Environmental impact analysis

Site Selection Criteria

For the majority of elderly persons, a site that is readily accessible to the community, with public transportation services available, is to be preferred.

Particular consideration should be given to sites that are within walking distance of local shopping, library, senior citizens' centre, churches and other focal points of community life.

A site that has some natural features may appear more desirable than a site in an inner area. Nonetheless it is a myth to assume that elderly persons wish to be in a totally quiet setting.

Research indicates that sites with the potential for a high level of visual and physical exchange with the community are the most successful.

Care is required, however, to ensure that the site selected offers enough outdoor space for residents' activities and recreation as well as clear delineation between pedestrian and vehicular movement.

Demand for parking space will largely come from staff and visitors rather than residents. Service vehicles will also require access to the site and designated parking areas.

The community context in which a facility for the elderly is to be placed should be clearly identified. Care should be taken to ensure compatible neighbours, and to avoid noxious uses and noise.

A site with busy traffic nearby may be a good one since it can provide endless visual stimulus, offsetting the disadvantage of the noise from passing traffic.

Neighbourhood patterns, walking distances and routes, local parks and community amenities should all be identified and recorded.

Site size should be determined largely by the number of intended users to be housed, the zoning and set-back requirements and the physical context of the community.

Except in dense urban areas, facilities of one to four stories are generally appropriate for the elderly, permitting identification with the site and the rest of the community.

Sites should be selected with travel distance for staff and visitors in mind. Experience has shown that isolated sites suffer from a lack of volunteers, transportation, visitors, staff and other social and community resources.

Land cost, although a significant component, should not be allowed to supplant other criteria for selection.

[1]See also Part III, Siting Criteria, page 50.

A site with difficult terrain should be carefully analyzed before being turned down if it meets other criteria. Imaginative solutions have been created using a variety of levels and entry points.

A site with mature trees or other physical features is also worthy of special attention.

Orientation should be considered in the early stages to ensure that prevailing winds, sun, snow, etc., can be handled to advantage.

Site services should be identified prior to purchase, to ensure that no extraordinary costs are entailed.

Information regarding sub-soil conditions, etc. should be obtained prior to final site selection, to ensure suitable conditions for both construction and loading.

Future development in the community, proposed renewal programs, future road networks, transportation plans, etc., should also be identified.

Some communities may require an "impact study" to be carried out to analyze the use of resources, land and community services as well as environmental issues. Clients are advised that such impact studies provide a useful tool in determining which site best suits their needs.

Many communities have traditionally zoned sites for special user groups. This policy has had the effect of isolating many elderly from the community, and is no longer considered acceptable. Every attempt should be made to integrate elderly residents into the community, through both the location and the scale of the facility.

Functional Programming

In broad terms, the objective of functional programming is to define a need and suggest spatial concepts to satisfy that need.

A functional program is a document that may be employed by users, policy makers and planners to establish organizational structure, staffing patterns, policy and procedures, operating costs, and short- and long-term planning. It provides the background for preparation of an architectural program covering such items as adjacency of services, rooms, environmental factors, siting and other constraints. It can also be used to forecast preliminary capital and operating budgets.

Content

A functional program should include the following:

- A statement of the objectives of the proposed facility
- An analysis of the groups served by such facilities, including identification of trends and potential changes in the characteristics and size of the user population
- An outline of the philosophy of care related to the user group
- An analysis of the relationships of the proposed facility with other facilities, organizations and governments
- A statement of the nature and range of social and health services to be provided
- A description of any limiting factors that affect the provision of such services
- Details of the programs to be provided, including the philosophical, psychological, sociological, economic and political rationale for the programs

- Detailed list of the organization and staff needed to operate the program
- A summary of net space requirements and an estimate of gross space required
- A list of spatial elements required to carry out and support the functions and programs of the facility, with a description of each space required in performance terms and a list of critical equipment for each space
- A description of the functional relationships of spaces to one another (adjacencies) and degrees of affinity required
- An outline and description of systems, e.g., clocks, intercom, telephones, television, etc.
- A proposed phasing sequence, if required, and time scale
- Outline master plan if required

Such a program should be drawn up by the client in conjunction with his consultants, CMHC and user groups in the community, together with other interested parties such as provincial and municipal governments and agencies.

Information Assembly and Analysis

In order to develop a functional program, an information research phase is required including:

- Information review, pertinent legislation and prevailing guidelines.
- Assembly of pertinent statistical data including demographic data on user group to be served.
- Assembly of available site and service information.
- Identification of related agencies and facilities, etc., and a review of their association with the project.
- Organization of assembled material.
- Review and assessment of all information.
- Review of material with relevant authorities.

Social Programming

Social programming, in the context of facilities for the elderly, includes all the activities that residents engage in during the course of their residence in the facility, except basic physical and health care maintenance.

Scope of Programs

Programs to a large extent reflect the size of the facility, the amount and diversity of ancillary spaces provided, plus available human and financial resources. Typical programs, common to most facilities, include:

Staff-initiated activities

Craft programs
Planned recreational activities
Spontaneous recreational activities
Special events (seasonal and others)
Occupational therapy
Religious services
Television watching

Resident-initiated activities

Letter writing
Reading
Watching
Conversation
Personal hobbies
Visiting
Walking
Gardening
Shopping

More specifically, the following options for social programming should be considered in the planning of residential facilities for the elderly. Some take place in the building, some in the grounds and some away from the facility entirely.

Activity Programming

Programs should be planned to suit the capabilities of residents, from the able-bodied to the bedridden. They should also be designed to meet the social and recreational needs of elderly residents.

Programs which encourage residents to participate either as individuals or in group activities to enhance their levels of physical and mental participation are desirable.

The nature of leisure in facilities for the elderly differs from that of society as a whole. Residents may derive most of their personal and social enjoyment from "leisure" activities.

Activities which residents enjoyed before moving to a nursing home are often more acceptable to them than those introduced to them for the first time. They should have the opportunity to continue as many of these activities as possible.

Social Activity

Social activity is influenced by the settings in which it takes place. Interior settings should be home-like and amenable to casual, spontaneous contact. Activity areas should be adjacent to areas that residents use daily. Multi-purpose rooms should be located in areas where there is a great deal of regular activity and not relegated to areas of least activity like basements or the ends of corridors. Books, magazines, puzzles, pianos or a view of nearby community activity can be used as environmental "props" to help stimulate interaction. Interaction with the community is of critical importance to the mental and physical well-being of the resident. It is also important to the staff to feel the support that comes with community involvement.

Staff Role in Programming

Staff in residential care facilities should be selected with the idea that they will participate with residents on both an individual and a group basis. Informal contact between residents and non-medical staff (e.g., housekeeping and dietary) can be very beneficial to residents who enjoy informal conversation. These staff members should all be made aware of programming goals and of the special needs of elderly residents.

The staff should be familiar with the background of each of the residents with whom they come in regular contact. Training programs can teach the staff ways to help counteract a resident's sense of loss and isolation, and to recognize the signs of depression and anxiety.

The medical model, based as it is on the nurse-patient relationship, is generally detrimental to creation of a home-like environment. It tends to emphasize the care of sick persons, rather than to encourage the individuality and relative independence of each resident. While staff and their offices should be accessible, such spaces should not dominate residents' living areas.

The use of volunteers from the community creates an opportunity for social interaction among many age groups. It can also bring a wealth of experience into a nursing home or hostel. Areas must be set aside within the facility to allow for training, program development and interaction with resident and non-resident elderly in a variety of groupings. Both community and residents of the facility will benefit from this interaction.

While a residential facility may not necessarily include all of the activities in the following checklists, the lists include the options most commonly found.

Checklist of Indoor Activities

Crafts

Needlework
Painting
Quilting
Weaving
Leatherwork
Metalwork
Carpentry

Games
Cards
Bingo
Chess
Checkers
Backgammon
Pool
Shuffleboard

Large Groups
Dancing
Singing
Entertainment
Music
Bazaars
Parties
Banquets
Meetings
Exercising
Discussions
Audio-visual shows
Lectures
Religious services

Small Groups
Music
Singing
Parties
Visiting
Swimming
Sauna
Whirlpool
Learning, formal or informal
Teas, luncheons, dinners
Clubs

Individual
Greenhouse
Volunteer work
Friendly visiting
Reading
Entertaining visitors
Music
Contemplation

Checklist of Outdoor Activities

On the Grounds
Picnics
Barbecues
Parties
Bazaars
Shuffleboard
Checkers
Walking
Sitting
Entertainment
Community gatherings
Gardening

Away from the Facility
Shopping trips
Vacations
Excursions
Family trips
Religious activities
Volunteer work
Service clubs
Spectator sports
Participation sports
Entertainment
Public events
Public service facilities (post office, tax office, courthouse)

Psycho-Social Checklist

In designing programs for the elderly, careful consideration should be given to the stages in the transition from independence to dependence. The following issues and needs, in addition to physical support and shelter, should be addressed:

Activity levels
Administrative policies
Behavioural patterns
Choice
Companionship
Competence
Continuity
Community
Cultural experience
Desires
Discouragement
Diversity
Education
Emotional development
Entertainment
Ethnicity
Exercise
Family
Functional skills
Handicaps
Happiness
Health
Hope
Human dignity
Income
Interaction
Interests
Legislative policies
Management style
Medical resources
Mobility
Needs
Nutrition
Personality
Participation
Play
Privacy
Public attitudes
Recreation
Rehabilitation
Safety
Self-worth
Sense of place
Sense of purpose
Sensory capabilities
Skills
Social context
Social impact
Socialization
Spiritual needs
Sports
Stimulus
Territory
Therapy
Transportation
Volunteers
Volunteering
Well-being
Work

Care Programming

The extent of care provided in facilities for the elderly depends upon both the levels of care offered and the flexibility of the services offered. The health of elderly residents fluctuates and tends to deteriorate, so that changes from one level of care to another are likely. (See Part II, Definitions of Levels of Care, page 5.) Care programs must be able to accommodate these changing health patterns.

Changing Care Needs

Recent research has shown that facilities designed to provide low levels of care experience demands for increased care services as residents age. In many cases this increased care cannot be provided satisfactorily. At the same time, transferring residents to other facilities to meet these needs has been recognized as traumatic and undesirable. Designs with the potential for changing care services are therefore more likely to succeed in the long term than those limited to one state of health and level of functioning.

Resident Composition

In facilities that offer several levels of care, alert and able-bodied residents can encourage a higher degree of performance in less capable residents. Conversely, a majority of senile or seriously impaired residents may set a low performance level for all. This is reinforced by the necessary staff emphasis on health care. For these reasons, it is best if only 25 to 30 per cent of residents require Level III care.

Scope of Programs

The care programming in any facility depends upon a number of variables:

- Size of the facility
- Levels of care offered
- Resident composition and health status
- Staff numbers, composition and availability
- Staff training programs and attitudes
- Financial resources of the facility
- Community resources available
- Care services available in the community
- Use of volunteers

Three distinct categories of care programs and activities must be considered in any facility for the elderly:

- Personal care
- Health care
- Psychological and social care

Personal Care

Personal care includes assistance with the activities of daily living, supervision with drugs or medications and some assistance with personal affairs. In providing personal care, the emphasis should be placed on the residents' abilities, not their limitations, and self-sufficiency should be encouraged.

Personal care services include assistance with the type of activities listed on page 10.

Health Care

Health care in facilities for the elderly focuses mainly on health maintenance. Virtually all residents experience some degree of physical or mental impairment, but they do not generally require acute care. Health maintenance involves prevention of illness and accident, promotion of maximum independence in all everyday activities, and reality-orientation. Location near a hospital and other health services is desirable.

Health care provided within a facility may include activities such as those listed under Part II, The Care Component, page 10.

Psychological and Social Care

Restorative programs can help offset the emotional and social losses brought on by age and by the move to a nursing home. Programs should encourage social interaction and reinforce the participant's sense of self. Emphasis in this area is on the normal routines of living, and care services may include:

- Life skills training
- Reality orientation
- Psychological services
- Occupational therapy
- Re-education services
- Social reactivation

In some situations these services may require a special allocation of space.

Programming Options

A number of programming options need to be considered before a master program can be designed. The choices made will depend on the scale of the proposed facility and the anticipated resident composition.

Considerations

The following issues should be considered:

- How will resident composition be maintained?
- Will residents be transferred to other facilities if their functional abilities change?
- Will residents be transferred if their needs for personal or health care services increase?
- Will members of the community be participating in day-care programs, overnight or short-term admission to the facility?
- Will care programs and services be delivered to members of the community?
- Will residents be encouraged to take short or extended trips away from the facility, either to visit their families or for vacations?
- What resources or shared services are available from professionals, paramedical personnel, volunteers, other community facilities and agencies, clubs, etc., to help provide a comprehensive program?
- What financial resources are available for capital and program needs within the facility initially, and when changes are needed to accommodate changes in resident composition and health status?
- What kinds of staff are available, how and where are they trained and what are the opportunities for teaching, training and research?

These questions should be carefully explored while the functional and architectural programs are being developed to ensure the feasibility and success of the project and its programs.

Implications for Staffing

Staff Requirements

Staffing requirements depend on a number of variables:

Size of facility
Levels of care being offered
Proportion of residents in each level of care
Level of activity programming offered
Level of social programming offered
Level of volunteer support available
Level of community interaction
Daily programs being offered to others from the community
Programs being delivered into the community
Legislative, accreditation or other requirements relating to users and levels of care
Management philosophy

Types of Staff

The types of staff serving a facility may be broken down into the following major categories:

Administrative
Professional care
Paramedical or personal care
Housekeeping
Maintenance
Dietary
Consultant
Activity

These staff may be full- or part-time and may work shift work (e.g., the professional and personal care staff).

Consultants

Consultants may include:

Accountants
Clergymen
Dentists
Dieticians
Doctors
Geriatricians
Lawyers
Occupational therapists
Ophthalmologists
Physiotherapists
Podiatrists
Psychiatrists
Psychologists
Social workers

Volunteers and Others
Paramedical and other volunteer participants in the facility may include:

- Local service clubs
- Individual volunteers
- Hairdresser and barber
- Recreational assistants
- Activities assistants
- Home-makers
- Local, municipal or provincial agencies

Staff Ratios
Our studies have shown that staffing ratios vary greatly not only from province to province, but also by levels of care. The national average is two residents to one staff member.

The functional program should identify the desired ratio of staff to residents in each care level. Where higher levels of care are involved, an increased medical and personal care staff will be needed, as well as a general increase in the staff-to-resident ratio.

Staff Composition
Our research has also indicated that staff fall into three major groups with the following national averages:

- Medical/nursing 55%
- Housekeeping/dietary 35%
- Administration/activities 7.0%

serving national average ratios of:

- 36% Level I care residents
- 32% Level II care residents
- 30% Level III care residents

Staff Space Requirements
Space for staff training, recreation, washrooms, etc. must be set aside in direct relationship to numbers. Staff morale can be critically affected by inadequate staff amenities. The most frequently requested spaces are for separate staff lounges or dining rooms, staff meeting and training areas. In remote communities, staff recreational amenities become increasingly important.

Professional staff frequently see themselves as distinct from other staff members, especially in large facilities. In smaller facilities staff activities are more homogeneous and such divisions are less likely to occur.

Specialized staff and consultants will require work space or offices appropriate to their needs. Such spaces may be located in standard-sized offices that can be shared or used as interview rooms by staff and residents. Permanent spaces need to be set aside for full-time staff who have a requirement for filing, storage and private work space. Generally, however, multi-use offices areas or adjunct spaces to areas of high activity will serve.

In larger facilities, staff washrooms and locker rooms should be designed to enhance morale. Space must be available for visitors and volunteers, including work space, washrooms, coat space, telephones, etc., in order to encourage community participation in the facility's programs.

The needs of night staff are frequently overlooked. These staff members require consideration in the areas of meal service, lounge space and communication systems.

Shared Staff Services

Contiguous facilities such as an adjoining clinic or another nursing care facility that use shared services usually find economic and administrative advantages in sharing the following personnel:

- Nursing staff
- Consulting staff
- Housekeeping staff
- Dietary staff
- Maintenance staff

If there are disadvantages in shared staff, they are in the area of staff-resident relationships. Combined facilities tend to house a larger number of residents and the potential for interaction between residents and staff is reduced under such conditions.

Staff Training

Staff in a geriatric care facility rarely have an opportunity to learn about the needs of the elderly except on the job. Medical and paramedical staff will usually have received their training in active treatment hospitals, where emphasis on rehabilitative and personal care for the elderly is slight.

Because of the relatively high staff to resident ratio, all staff in a facility for the elderly need to understand the significance of their role, which goes far beyond interpretation of an individual job description. It is essential, therefore, that all staff receive some specific training in geriatrics and the needs of the elderly.

To accommodate such a training program, most facilities will have to set aside space and time to conduct programs involving all levels of staff. Personal care staff can be educated on the job: multi-disciplinary teams including health care professionals, psychologists, social workers and gerontologists should be available as resource personnel to assist in such training programs.

Housekeeping, maintenance and even dietary staff should all be made aware of the special needs of the residents they serve. Only in this way can it be assured that all staff will be fully supportive in their interaction with elderly residents.

Costs

Capital Cost

The capital cost of a facility will depend on a combination of factors.

Land

Size and cost of land
Cost of servicing the land
Accessibility of the site
Size (scale) of the facility

Construction and Design or Acquisition and Rehabilitation

Required standards of construction for the facility (by codes, etc.)
Space standards for care facilities determined by provincial and local regulations and accreditation standards
Complexity of the design solution
Special design elements in the facility including unique architectural features, finishes, etc.
Gross area per resident
Total amount of accessory space
Inclusion of major service and administrative components:
- Central kitchen
- Central laundry
- Central purchasing and stores
- Central teaching areas, etc.

Inclusion of special health care elements:
- Nursing unit
- Special physiotherapy areas
- Whirlpool
- Gymnasium

Inclusion of special recreational and activity elements:
- Game rooms
- Craft rooms
- Special lounges (television, cards, etc.)
- Separate dining area
- Shopping facilities
- Community centre
- Swimming pool

Cost of site development, rough grading and finished landscaping
Scope and cost of built-in furniture, fittings and equipment

Market Conditions
Local construction costs and market conditions
Construction time-span and season
Availability of interim and long-term financing

Operating Costs
The operating costs of a facility for the elderly are in large part a reflection of the following direct and indirect costs:

- Staff composition
- Staff/resident ratio
- Proportions of care levels in facility
- Range of services and programs offered in facility and to the community
- Use of volunteers and other community resources
- Location of facility
- Construction standards of facility
- Size of facility
- Heating and lighting costs
- Administrative costs
- Maintenance costs, interior and exterior
- Care costs
- Medication costs
- Food service costs
- Laundry costs
- Housekeeping costs
- Effective use of space
- Special costs for consultants and part-time staff
- Available per diem financing for services, care and shelter
- Insurance costs
- Transportation and/or other hidden accessory costs

There is no doubt that a compact physical solution with a low resident gross area, limited services and programs, will all contribute to keeping operating costs down. In addition facilities which provide only low levels of care to reasonably mobile, autonomous residents, will allow for lower staffing ratios, lower levels of demand on housekeeping, laundry and maintenance, as well as direct care services. These factors have been persuasive in many parts of the country and have resulted in facilities which serve Level I and II care residents only, with low levels of social and care programming. Such facilities are economical but they do not provide the continuity of care services from one level to another that is recommended in Part I.

The proportion of residents needing higher levels of care in a facility undoubtedly directly affects the per diem costs for residents in the facility. These are usually visible in higher staff ratios and higher gross area per resident.

A balance, therefore, of all these considerations is required in the programming stages to ensure that optimum physical and economic solutions will result.

Future Needs and Expansion

Programs and facilities which do not anticipate certain changes that will occur during the life-span of the building will generally prove inappropriate a few years after being opened.

Change

The incremental rate of change in society's expectations alone requires that future facilities and programs respect and anticipate those changes. In addition, the changing age structure of the general population, increased life expectancy, and changes in treatment and care programs will require appropriate architectural solutions.

In order to accommodate changes that may occur at sociological, demographic, economic, technical or political levels, the functional program and master plan should anticipate the possibility of such changes.

Health Status of Residents

The changing health and mobility of residents in a facility should also be anticipated. Facilities generally should be flexible in concept, therefore, with provision for expansion to meet growing space needs.

Master Plan

A facility is often planned for construction over a period of years. The completed facility should be able to respond to the needs of the highest levels of care ever anticipated in the facility.

Further site development and enhancement should also be considered. Care should be taken to ensure that adequate outdoor recreation areas are maintained, as well as site access, etc. Visual amenity is frequently overlooked when expansion needs are being satisfied.

Community Orientation

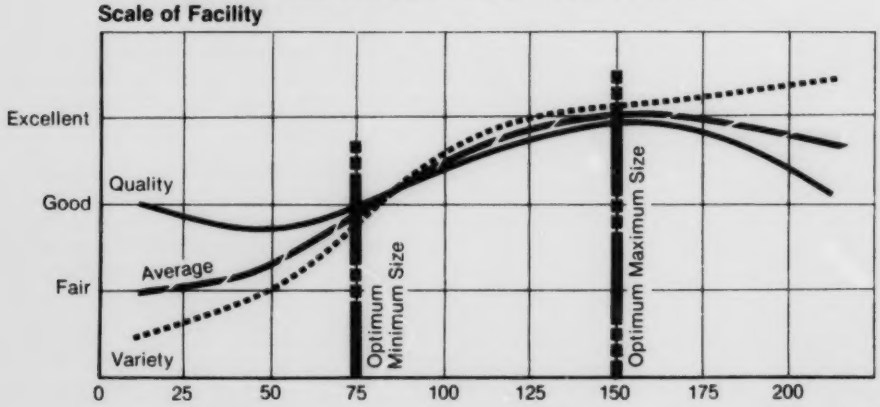
It can be assumed that successful facilities will be community-oriented, fostering a high degree of interaction and service exchange. Spatial and organizational modifications may be required to encourage the development of programs that serve elderly people in the community as well as those in the facility itself, e.g., day-care, homemaker services, personal care services, meal programs, physiotherapy and activity programs.

The quality of life within a facility is reflected in the resident's view of his own self-worth. If the setting provides the physical and psychological support essential to a good self-image, then the quality of life can be said to be good.

Variety within a facility reflects the opportunities for participation, choice and stimulus. Small facilities can rarely offer enough such opportunities.

Theoretical Model

Variety and Quality of Services and Programs Provided



Comment: At a certain overall size, the quality of life within a facility begins to be affected in a negative way, and alternatives to expansion should be considered.

Part III
Architectural Considerations

Architectural Program

Purpose and Philosophy
The purpose of an architectural program is to translate the needs identified in the functional program into a statement of physical and spatial needs.

In the past, architectural programs often included only a listing of spaces by name and area. For this purpose, however, it is also desirable to express a philosophy of care for the users, as well as a description of those users and their needs, translated into an architectural context.

Social Programming
The program should clearly identify the relationship between social programming, administrative policies and the intended physical solution. For the most part, architectural programs should be open-ended to deal with long-range change in the needs of the users, changes in the philosophy of care and potential change to the physical setting to meet changing needs.

Standards
Spatial standards based on minimum criteria and benchmarks established through legislation, mandatory or advisory guidelines, rarely satisfy the long-range needs of the community and the users of facilities. Care should therefore be taken to project future needs and anticipated standards before the final architectural program is agreed upon.

Cost Benefit
Budgeting for both capital cost and operating costs should take into account the social cost benefits of a facility that is adaptable to changing demands.

Performance Terms
An architectural program identified primarily in performance terms will permit a variety of solutions to be developed, which will permit regionally appropriate solutions and encourage innovation to satisfy unique conditions.

Summary
An architectural program, therefore, is a statement of spatial and environmental needs, translated from the functional program, for use by the planners, architects and engineers of a project.

From such a comprehensive program initial and final design drawings can be developed. During the development of construction documentation, the architectural program will be used as a checklist.

Performance Specifications

The intent of performance statements is to isolate a problem and describe, verbally rather than statistically, the desired solution. For facilities that are to be used by the elderly, the performance requirements will obviously differ from those for the well, able-bodied adult or child.

Part IV of this guideline identifies specific user disabilities as they relate to space and program considerations. In developing the architectural program, spaces should be described in functional terms, to satisfy the users so identified.

All facilities for the elderly must be physically accessible due to the reduced mobility, increased frailty, and accumulation of specific disabilities in this user group (see tables on pages 48 and 49.)

The path of accessibility through areas used by residents follows a natural order. In sequence this involves the following areas:

1. Barrier-free site and approaches
2. Main entrance and lobby
3. Related administration areas
4. Circulation
5. Lounges and activity areas
6. Residential areas including patios, roofdecks, balconies
7. Accessory residential space
8. Care areas
9. Dining areas
10. Community use areas

Secondary areas include the following:

11. General administration
12. Central kitchen
13. Central laundry
14. Central housekeeping
15. Central maintenance
16. Service and delivery

Following are performance criteria, for accessibility and general functioning, for the primary areas identified above. (For siting criteria, see page 50.)

1. Barrier-free site and approaches

The site and the pedestrian approaches to the site should be accessible to persons with mobility problems, including those who use walking aids or who are in wheelchairs. The approaches must be free of any design that might present a barrier to any disability group such as the blind, the deaf, the wheelchair-bound and those using walking aids.

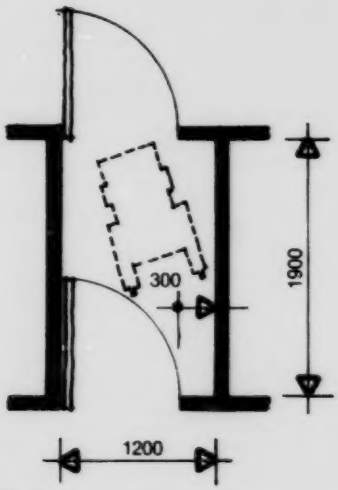
Curb cuts, sidewalk ramps, grades in pedestrian paths and all slopes on the site where there will be pedestrian movement must conform to the prescriptions of *Supplement No. 5 to the National Building Code*.

All walks, footpaths, ramps and exterior steps should have non-slip surfaces under both wet and dry conditions. Some blind persons require a lip at the bottom of a ramp to provide a sense of orientation. Such a lip will bar access to some wheelchair users if it is greater than 15 to 20 mm.

A person should be able to transfer from an automobile to a wheelchair and move freely in that wheelchair, without assistance, from the parking space (whether in the street or in the parking lot) to the building entrances and to all amenity areas designed for use by the residents.

2. Main Entrance and Lobby

The main entrance and lobby should be accessible to persons with mobility problems, including those who use walking aids or who are in wheelchairs.

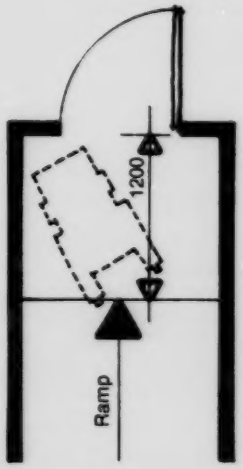


Doors in Vestibule

Level access should be provided throughout the direction of travel.

Floor surfaces should be non-slip under both wet and dry conditions.

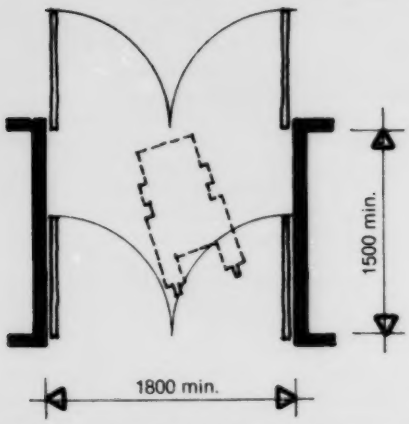
Supplementary building aids, e.g. handrails or guardrails, should be included.



Doors in Vestibule

Entry and vestibule doors should be easy to operate by persons with little physical strength; hardware should be easy to use by persons with limited dexterity and strength.

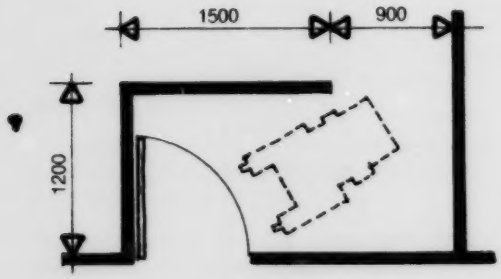
Doors alone and in sequence should permit free passage of a wheelchair operated solely by the wheelchair user.



Lobby Space for Consecutive Pairs of Doors

Signs in all approach and entry areas should be legible to those suffering perceptual handicaps. Supplementary information may be necessary for the blind.

Protection from the elements (wind, rain, and snow) should be provided over frequently-used entrances. Sitting areas should be provided for viewing, waiting, and for the removal of boots, overshoes, etc.



Offset Doors in Vestibule

Entry areas should be well-lit continuously to provide personal security.

Main entrances may require monitoring by staff or other persons. The entry should therefore be visible from an occupied area of the building.

At night, the entry should be manned, or entry should be ensured by provision of a mechanical device to alert attendant personnel.

3. Related Administration Areas

Areas used by administration, adjacent to the main entrance or main circulation routes within the facility, should be physically accessible to all residents.

The central information area should have desks or counters that are usable by either ambulatory or wheelchair-bound residents.

Information boards, clocks, signs and other communication aids in these locations should be designed or selected to be usable by all residents.

Personal mail, packages, storage for personal items of value, etc., should be accessible to all residents, regardless of disability.

The general office, administrator's office, and any other counselling or interviewing areas used by residents and staff alike should be physically accessible to all users with disabilities.

Waiting areas adjacent to administrative areas named above should be appropriate for elderly residents and should be able to accommodate wheelchair users. Such spaces should be comfortable, well-lit, be adequately furnished and decorated, and be close to the designated functional space. In addition, such spaces should be designed to have a view of passing or adjacent activity without impeding the general flow of circulation.

Administrative spaces offering direct services to residents should be visually and physically close to the major horizontal and vertical circulation points in the building, be well-lit, and identified with appropriate signs.

4. Circulation

Primary and secondary circulation spaces include both horizontal and vertical modes.

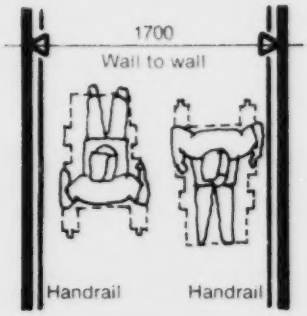
Corridors

Corridors are the horizontal circulation component in most residential care facilities. Generally, corridors form part of a circulation pattern linking lobbies, communal spaces and such vertical components as stairs and elevators. Occasionally corridors are linked by a series of public spaces.

In a facility for the elderly, ease of mobility and length of travel are the two criteria that must be satisfied. In addition, consideration must be given to accessibility, internal orientation and safety.

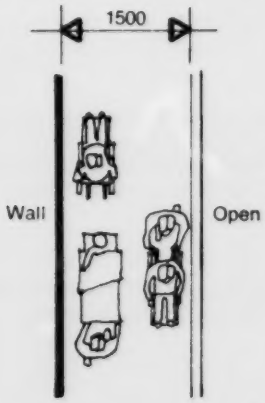
To satisfy these criteria the following guidelines are advised:

Corridors should permit two persons to pass one another easily using mobility aids such as walkers, canes or wheelchairs.



Passing Space for Two Self-Propelled Wheelchairs in Corridors

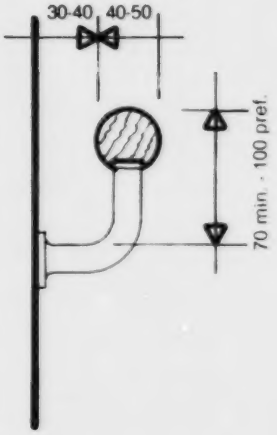
In Level II and III care areas, corridor width should permit the easy movement of a stretcher from adjacent functional spaces.



Walkways

Corridors should not be excessively long and should offer diversity of view and spatial arrangement, with sitting areas to encourage casual social interaction. They should provide resting areas for those with limited energy.

Corridors should have well-lit handrails mounted on either side, to aid in walking.



Wall Fixed Handrail

Handrail Section

Circulation spaces opposite elevator doors should be wide enough to allow a group to wait for the elevators in comfort without impeding the free flow of other traffic.

Orientation aids: the use of signs, colour coding, graphics or other features should be considered and should be organized in a comprehensive way throughout the facility. Signs in corridors should be legible to those with some perceptual handicaps, lettering should be easily distinguishable from background by colour or surface treatment and size.

Changes in direction should be emphasized by special identifiable features, as an aid to orientation.

Individual floors, of similar corridor layout, should be distinguishable from one another through the use of colour coding, special furniture, planting, works of art, etc., as well as clear signs.

Unshaded windows at the ends of long corridors produce glare and should be avoided. Introduction of daylight intermittently throughout a corridor encourages a sense of awareness of the outside world. Windows can also provide a view of high activity as an aid to general orientation.

Public address systems for general or emergency announcements may be desirable in areas with heavy traffic, providing that noise does not intrude into private areas.

Corridors should be well-lit at all times. Emergency and night lighting should be adequate for safe exit in case of fire. Such light should not spill over into private areas such as residents' bedrooms.

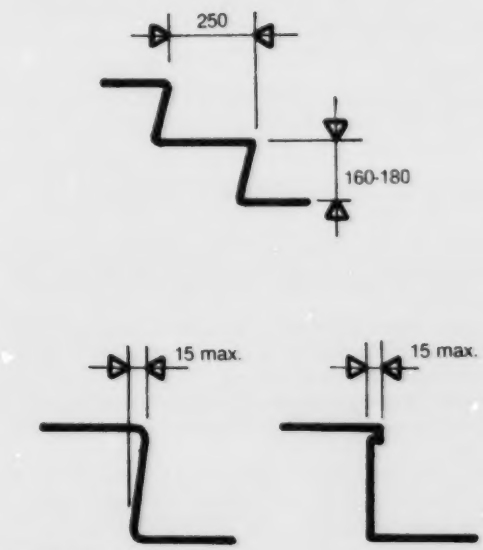
The general level of lighting should be high with a minimum of shadow and glare. Direct light sources should be avoided.

Floor surfaces should be resilient and non-glare and should permit the easy passage of wheeled vehicles such as wheelchairs and carts. The floor surface should contrast in colour or tone with the adjacent wall surfaces to assist the perceptually handicapped.

Staircases

In facilities for the elderly, staircases are usually installed for exit purposes, occasionally for internal vertical circulation. To satisfy the special needs of elderly users, it is recommended that staircases generally meet the following design criteria.

- Stair width, treads and risers, length of run, etc., should be determined by prevailing codes and standards. In addition, attention should be given to provision of non-slip treads and nosings. Where nosings extend beyond the riser, these should be rounded and should be designed to minimize the possibility of tripping by elderly persons going up the stairs using walking aids, or with walking disabilities.



Stair Nosings

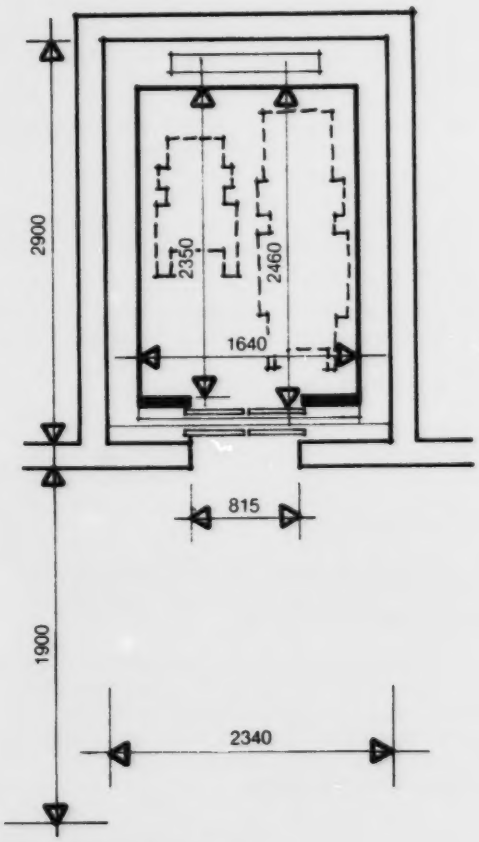
- Handrails should be continuous on both sides and should be appropriate in section for those with poor gripping abilities.
- Lighting on the stairs should be overhead and should not produce glare.
- Wall and floor finishes should be non-reflective. Doors into stairwells should include glazed vision panels as an aid to orientation. Where possible, staircases should be located on exterior walls with windows offering a direct view to exterior areas, as a further location aid.
- Landings at individual floors should have appropriate signs or graphics to indicate the floor level and adjacent areas.
- Stairways should be adequately heated and ventilated and should also be pleasantly decorated to encourage active use.
- Hardware on stair doorways, switch heights, etc., should all be selected to accommodate handicapped users.

Elevators

Elevators are usually the primary mode of vertical circulation in buildings of more than one storey, serving elderly residents.

Elevators should generally meet the following basic criteria:

- The floor area of the elevator should be able to accommodate a stretcher or wheelchair, with an attendant.
- All controls, emergency equipment, etc., should be accessible to and usable by the elderly with physical handicaps.
- The elevator cab should have controls that permit an easy ride and be self-levelling at each floor.
- Thresholds and floor finishes should be designed to allow free passage for walking aids and wheelchairs or carts.
- Door closing time should be adjustable to accommodate residents with reduced mobility and responsiveness.
- The elevator cab should have a handrail on three sides, and consideration should be given to providing seating if the cab serves more than three floors.
- The elevator signs, numerals for floors, etc., should be clearly legible and mounted at a height visible to both seated and standing passengers.
- The jambs of doors in elevator recesses should include clear identification of the floor level as an aid to perceptually handicapped persons.
- Annunciator systems or call back features should be available for emergency purposes, and may also be desirable for the visually impaired, to announce floor levels in multi-storey buildings.
- The elevator cab should be evenly lit, to the same level as adjacent floor areas.
- Finishes in the cab should be easy to maintain.



Stretcher-Wheelchair Elevator

5. Lounges and Activity Areas

Lounges and activity areas of all kinds should be designed for the convenience and comfort of residents.

The size of such spaces should be adequate to accommodate a variety of social groupings, depending on the expected use of the particular space. Such areas should also accommodate a mix of both ambulant and wheelchair-bound elderly residents.

Subdivision of large, multi-purpose spaces may be desirable to accommodate a variety of functions simultaneously, or to accommodate small group activities appropriately. Dividing screens, movable partitions, etc. should be easy to operate by elderly residents.

Adequate equipment storage space, readily accessible to multi-functional spaces, should be provided.

Adjunct spaces, e.g., storage, coatrooms, volunteer spaces, activity directors' offices and public washrooms, should all be physically accessible to handicapped and elderly residents.

Direct access to exterior activity areas and landscaped recreation areas should be provided wherever possible.

Interior design, including walls, surfaces, special features, flooring, furniture, etc., should provide visual stimulus and variety. The use of colour and textural changes is to be encouraged.

Furniture and fittings should be selected for use by elderly residents, with appropriate seating accommodation where required.

Large assembly areas may require some aids to walking, e.g., handrails appropriately located where groups are standing, waiting or circulating.

Floor surfaces should generally be non-slip, usable by those with walking problems and by wheelchair users. Flooring materials should be selected to be non-reflective and non-static; humidity control may be required.

Ceiling surfaces should be selected for their acoustic qualities, as well as ease of maintenance. Finished height of ceilings should be determined by the proposed function and scale of such spaces.

Windows should be provided in activity and recreational areas, lounges, etc. Such windows should offer views of outside activity and landscaping and should have some sections that open. Drapes or blinds should be provided to screen windows from low sunlight and permit darkening of the room for films.

Adequate lighting should be provided for working spaces, appropriate to all potential activity and recreational programs. Direct light sources should be minimized to reduce glare.

Ventilation should be provided for all places of assembly involving 10 persons or more.

6. Residential Areas

Residential areas identified in Part III, Space Requirements, page 54, include spaces for the following basic functions:

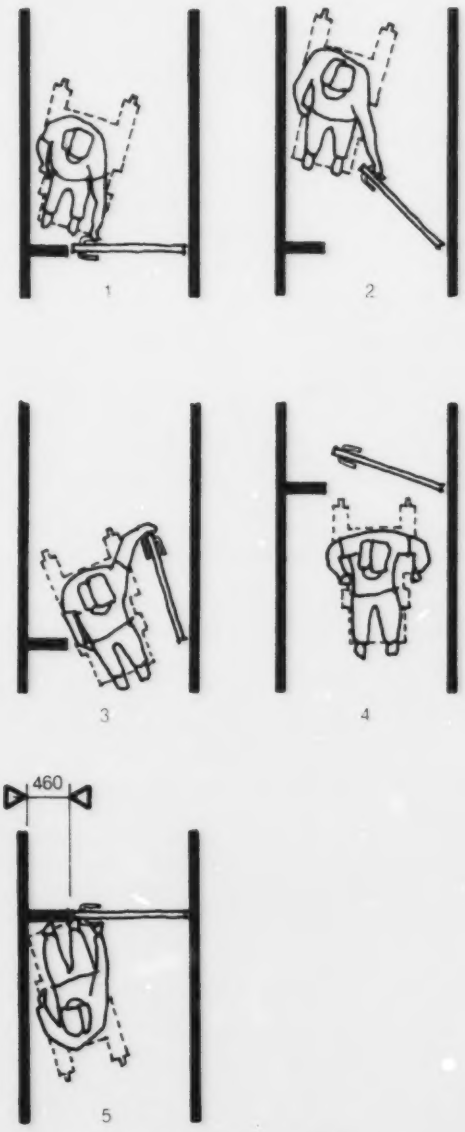
Living
Sleeping and resting
Eating and food preparation
Toileting
Bathing
Grooming
Self-maintenance and exercising
Housekeeping and laundry
Socializing and communicating
Storage
Recreation, hobbies and personal interests

These functions may be carried out in a variety of physical spaces. The distinguishing characteristic in care facilities for the elderly is that a certain amount of monitoring, or access to care service, may be required by individual residents.

In arriving at solutions that satisfy these two needs, care must be taken to ensure that the privacy and independence of the resident is not unduly or unnecessarily affected.

Solutions that recommend the use of a bedroom for a number of purposes presume that one room can satisfy all these needs. Solutions that offer choice, in size and definition of private space, are preferable if they also satisfy other criteria such as ease of maintenance, staffing and costs.

Access
Interior circulation spaces should allow the free passage and rotation of a wheelchair. Additional space should be allowed on the opening edge of any door to allow easy approach and operation by a person in a wheelchair.



Approach to Door by Wheelchair Users

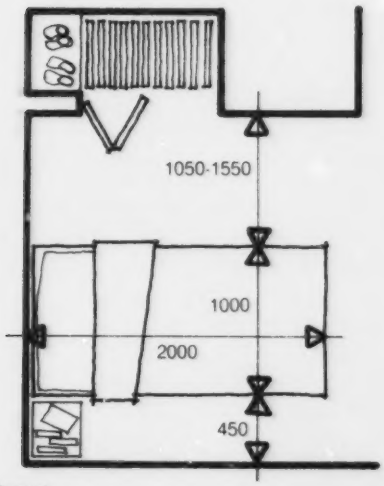
All spaces, equipment and furnishings should be both physically accessible to and usable by the resident. Care should be taken in selection to ensure that these criteria are satisfied. (See Anthropometrics, Appendix A, page 76.)

Decoration of suites or rooms that are part of the resident's personal living space should be appropriate to the resident's preferences and abilities.

Level I Care
Level I care residents, by definition, are more active than residents requiring higher levels of care. Solutions appropriate for Level I care residents should satisfy the following criteria:

- Residents should have enough space to allow for individual functioning with a minimum of assistance and monitoring.
- Care services should be available, but should not be an integral part of the residential component.
- Living space, including spaces for all day and night uses, should be usable by the resident independently.
- Residents should have the choice of living alone or sharing living accommodation with another resident (e.g., spouse, relative or friend).
- It is best if furniture is arranged by residents to suit their personalities and living patterns.
- Where it is necessary to share components (e.g., bathroom, kitchen, storage), they should be designed to permit private use by individual residents.
- Day spaces (e.g., living areas) should be appropriate for persons with a reasonable level of activity and independence. Such spaces should have windows and, where possible, balconies or patios offering a view of outside activity and landscaped areas.
- Provision should be made for seating areas close to the window, with seating for more than one person.
- Window sill heights, transoms, etc., should be located so that seated residents' view is not restricted in any way (see Anthropometrics, Appendix A, page 76.)
- Provision of space for residents' hobbies, requiring little or no equipment, should be considered, including space for appropriate storage and display.

- Storage space should accommodate a full range of personal belongings, including clothing, toiletry items, etc. Some storage space should be lockable for valuables. Total storage requirements should satisfy all prevailing codes and standards. Storage space should be somewhat flexible so that residents can reorganize it to suit individual preferences. It should be easy to maintain and be adequately ventilated.
- Arrangement of the bed and other furniture should be variable. Therefore emergency and communications systems should be accessible with a variety of furniture arrangements.

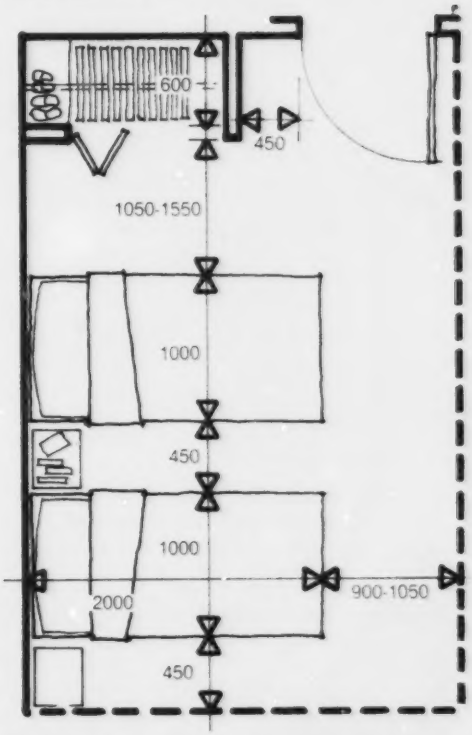


Bed Alcove[1]

Level II and III Care

Residents in these categories may more frequently be located in shared accommodation. However, it is suggested that all aspects of personal privacy, as outlined in the previous sections, be retained. Residents, regardless of care level, need to establish and maintain their independence and ability to function in their own quarters.

The need for increased personal care services to residents, or the need for a greater degree of health maintenance and monitoring, require only that the spaces occupied by residents throughout the day can accommodate the activities of care personnel.

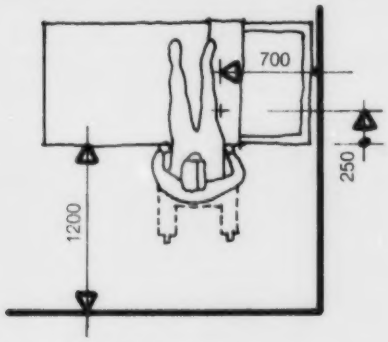


Two Person Bedroom with 1 Handicapped Level I Care Resident[1]

The need for care staff to supervise or administer to residents should not be the predominant criterion used to make decisions regarding personal space.

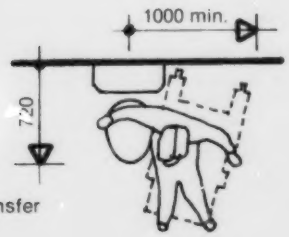
[1]These layouts show clearances only, not recommended room sizes.

Accessibility becomes more important as more residents in these levels of care require mobility aids.



Wheelchair Transfer to Bed

It is critical to provide circulation space adjacent to beds and storage components, as well as in washrooms and bathrooms, to accommodate wheelchairs. Space should be sufficient for lateral transfers or full rotation of wheelchairs, and for personal assistance.



Lateral Transfer

Access to sitting areas beside windows should not be limited in any way. Where joint day spaces are provided, provision for sufficient seating for residents and guests should be provided.

Shared spaces, such as bedrooms and living areas (or day spaces), should allow for territorial use by individual residents, with full opportunities for personalizing such spaces.

The furnishings selected should be appropriate to higher levels of disability, frailty and insecurity of motion.

Fixtures and fittings should be usable by persons with all levels of disability.

Economies that may appear appropriate in the initial stages, particularly those involving the use of minimum residential spaces, will frequently prove inappropriate in the long term as residents' needs and expectations change. Solutions should take into account the life of the building, and ensure that no spaces or groups of spaces are so inflexible that they cannot accommodate changes in care, changes in philosophy or changes in the users' ability to function.

Design Considerations

Finishes for loose furnishings, drapes, etc. should be fire-resistant and satisfy local fire codes regarding smoke and fuel contribution.

- All finished surfaces should be easy to maintain.
- Flooring materials should be resilient and allow the easy passage of mobility aids.
- Areas where spillage might occur should be non-slip under wet or dry conditions.

Lighting levels should be appropriate to the task to be performed in any area. Light sources should not produce glare. A variety of lighting should be available in living and sleeping spaces and should be domestic in character rather than institutional.

Space heating and ventilation should be controllable, to a certain extent, by the resident. Heating levels should be appropriate for elderly users, generally higher than average residential standards.

Ventilation should not create undesirable drafts and should be controllable to some degree by the residents.

All hardware, controls, electrical and mechanical devices should be usable by all residents, regardless of handicap.

Communication and media systems should permit the resident to use his or her own telephone, radio, television and intercom system.

- General building public address systems should not intrude into private or personal space.
- Emergency call systems to both care and administrative personnel should be available and accessible to all residents, regardless of disability.
- Supplementary communication or emergency signals may be required for persons with multiple disabilities and for the blind and the deaf.

7. Accessory Residential Space

Laundry

Space should be provided for domestic laundry equipment in conjunction with residential living areas, to encourage residents to do their own personal laundry.

The number of residents sharing such laundry areas should be identified, including the amount of equipment required.

Laundry areas offer an opportunity for social interaction. Such areas therefore should include seating space with a view of the outdoors, or some other activity area. It should also include space for ironing and folding and for storing items such as detergents, laundry baskets, etc.

All such spaces should be accessible to and usable by residents with limited functioning abilities, including those in wheelchairs.

Where appliances are to be accessible to persons in wheelchairs, front-load washers and dryers should be provided.

Finishes should be easy to maintain, floor surfaces should be non-slip.

Communal Day Spaces

In facilities where individual day space, en suite, is limited, communal living rooms suitable for 10 to 15 persons are recommended. These should satisfy the basic criteria of accessibility and pleasant non-institutional decor and be furnished in a way that allows rearrangement by individual residents. Such spaces should be adjacent to areas of high activity and should be located to take advantage of views to the exterior. A choice of spaces, offering a variety of sizes, views, orientation to the sun, access to exterior sitting areas, etc., may be desirable, dispersed through residential areas.

Housekeeping and Maintenance

Supplementary space for the use of housekeeping personnel may be required in residential areas. Such spaces are used primarily for cleaning materials and equipment, plus a janitor's sink. Additional space will be required for clean and soiled linen where residents do not do all of their own laundry.

Storage spaces should therefore be able to accommodate carts and shelving for linen, cleaning materials, cleaning equipment, soiled linen and refuse.

8. Care Areas

Care areas fall into two major categories:

Personal care
Health care

In facilities dealing primarily with Levels I and II residents, space for delivery of personal care services predominates. With the introduction of Level III care residents or a high proportion of Level II care, space for health care services becomes more significant.

The need for such spaces should be identified at the programming stage, along with the articulation of care delivery systems and the philosophy behind them.

Personal Care Spaces

Sleeping, living and dining spaces have been discussed elsewhere in this section.

Care components covered here include:

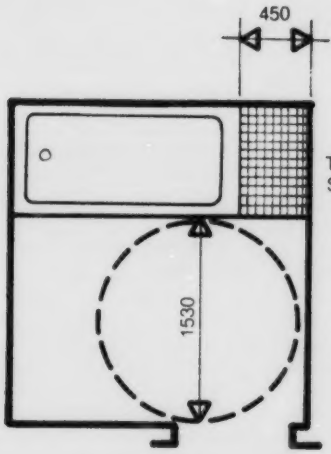
Special washroom and bathing areas
Activity and exercise areas
Occupational therapy areas
Beauty and barber shop
Nursing areas
Counselling spaces
Personal care staff spaces
Special equipment storage

Special Washrooms and Bathing Areas

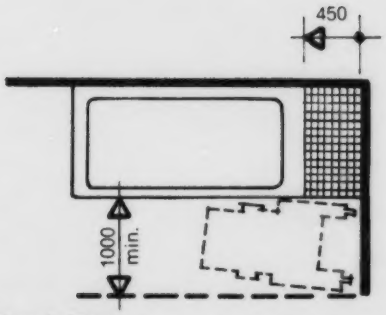
Residents requiring assistance with bathing may also require options in bathing, depending on their disability. Solutions which may be considered include the following alternatives, used alone or in conjunction with others:

- A raised standard bath with transfer seat at one end and grab rails to permit partly assisted bathing.

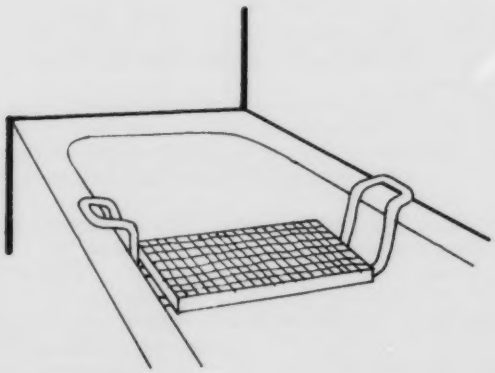
- **A special tub bath, with mechanical transfer seat, portable lift, or a hydraulic lifting post with integral seat.**



Bathroom

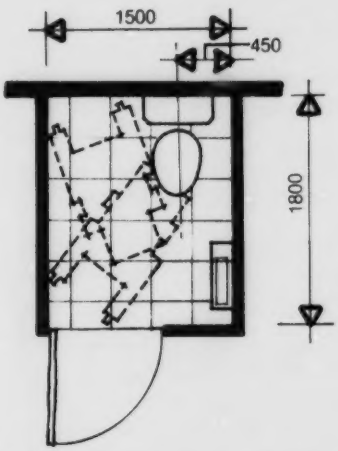


Built-in Transfer Seat

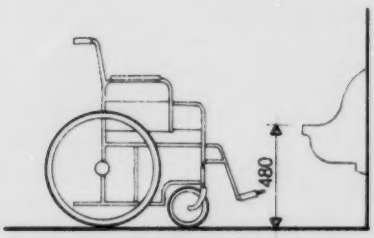


Removable Transfer Seat

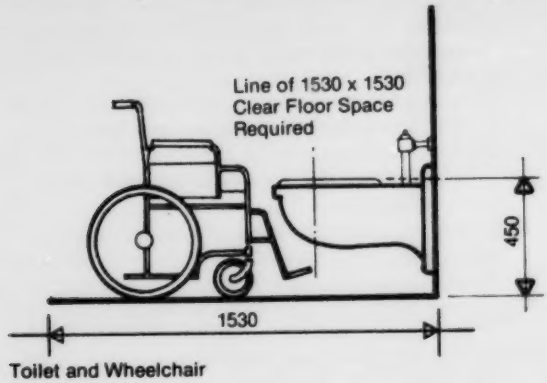
- **Whirlpool feature or attachments to bath, for one or more bathers.**
- **Flexible hose and shower, usable in a variety of positions or hand-held, located in a wheelchair shower or over a bathtub.**
- **Automatic thermostat and temperature control on water supply.**
- **Raised toilets, or adjustable toilet seats at a level suitable for lateral or frontal transfer. (See page 75.)**



Small Toilet Compartment for Wheelchair Users



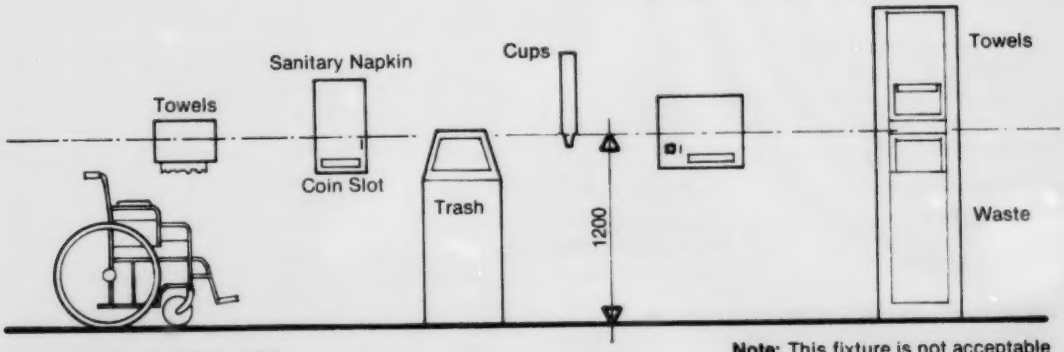
Urinal and Wheelchair



Toilet and Wheelchair

- Built-in grab rails or retractable rails to provide support while seated on the toilet as well as during sitting or rising.

- Accessible washbasins with lever handles, or single operation faucet, complete with temperature controls, and insulated waste and hot water pipes. (See Part IV, Fixtures and Fittings, Faucets, page 67.)
- Mirrors, shelves, washroom accessories, dispensers, etc., mounted at height accessible to both wheelchairs and ambulant residents.
- Emergency call system for residents requiring assistance.
- Privacy for dressing and undressing.
- Sitting space in bathing area to allow for dressing, etc.
- Space for depositing or leaving items of personal clothing, linen, etc.
- Non-slip flooring, suitable under dry or wet conditions.
- Air temperature or heating controls, adjustable to needs of the residents.
- Sufficient ventilation to remove steam and odour without causing drafts and body chill. (See page 65.)



Public Washroom Accessories

Note: This fixture is not acceptable unless separate towel dispenser is also installed 1000 mm high.

- Easily maintained finishes on all surfaces and fixtures.
- Lighting sufficient for bathing and grooming and to allow identification of safety devices, controls, etc.
- Turning and storage space for wheelchairs or walking aids.

Activity and Exercise Areas

Multi-purpose or special activity spaces may be developed to suit programming needs, the scale of the facility and the level of functioning of the residents.

In addition to the normal activities of daily living identified in the residents' areas, dining, etc., other programmed activities need to be accommodated. These include exercise areas or special use areas for group activities.

In Level I and II care homes, physiotherapy may be offered only on a part-time basis. Exercise and treatment may be carried out in the resident's own room or in an identified area of the facility.

Space is required to set out special exercise equipment and to store it when not in use. In low-level care facilities, use may be made of bedrooms, treatment rooms, multi-purpose rooms, corridors, etc., for this purpose.

Special exercise areas may be required where the volume of exercise and physiotherapy services is high and where there is a high proportion of Level II or Level III care.

Occupational Therapy Areas

A variety of organized activities should be allowed for, including space for hobbies, crafts, training, etc. Since many of these areas should be able to accommodate specialized equipment, an assessment of spatial needs should be made during the programming stages.

- Residents may wish to work alone, in small groups or with the assistance of a staff member or volunteer.
- The use of multi-purpose space can be scheduled to meet programming needs and available staff and resources.
- It should be possible to divide large spaces to serve small groups.
- All such spaces should be fully accessible to and usable by those with disabilities.
- Occupational therapy areas require diverse storage space for both loose and fixed equipment, as well as for finished products.
- A display area and information board are desirable.
- A washroom, usable by residents, should be located nearby.
- A small office area for staff is desirable, with a view over most of the area.
- Furniture should be easy to maintain and rearrange.
- Finishes should provide visual stimulus and be easy to maintain. Floor surfaces should be resilient and non-glare.
- Lighting levels should generally be high and also easy to modify to suit special tasks.
- Sufficient service outlets, mounted at an accessible height, should be provided for equipment.
- A sink with counter space on either side is desirable.

Beauty and Barber Shop

Grooming, for both elderly men and elderly women, is important to a sense of well-being. Space should therefore be provided to accommodate such grooming needs.

- The decision whether to set aside specific rooms for this purpose will depend upon the total number of residents. However, it is recommended that wherever possible, discrete spaces be set aside for such purposes.
- In either a beauty or barber shop, space should be provided for hair-washing, cutting and drying.
- Sufficient waiting space should be available for both ambulant elderly and those using mobility aids, as well as accompanying staff members.
- Storage space is required for both equipment and supplies.
- Lighting should be appropriate to the special tasks of grooming.
- Positive ventilation is required to remove fumes and odours.

Nursing Areas

Nurses' offices and duty areas are generally required for carrying out recording, organizational and scheduling tasks as well as handling communications, medication preparation and general administration. Privacy is needed for many of these tasks, especially auditory and territorial privacy.

- Nursing offices or duty stations should provide space for writing, charting and communications systems.
- The work space should permit a minimum number of two persons to work at seated positions.
- Where a separate nursing office is provided, space should be allowed for approximately three persons in total, for interview and training purposes, complete with desk and filing space.
- Offices should preferably be located on an exterior wall, but where only one space or office is provided it should be located within easy travel distance of residents' areas.
- Duty stations generally serve 25 to 35 residents, or can be doubled up to serve 50 to 70 residents. Such duty stations should be located where travel distance to residents' rooms is reasonable (33 - 45 m max.)
- A sitting or waiting space adjacent to a duty station is desirable.
- Working surfaces in duty stations should be protected from casual observers and should be well lit.
- Recording and charting systems should be identified at the programming stage.
- Where a central call system is included, a console or main control point should be located at the main and supplementary duty stations.
- A night-relay system may be required where all stations are not serviced at night.
- A separate medication preparation area is desirable, with lockable storage, a counter and sink, and a small refrigerator. The size of such a space will depend on the number of residents served and the levels of care.

Counselling Spaces

One or several small offices may be required, depending on the size of the facility and the level of care offered.

- Typical services include social work, psychological services, pastoral services, etc.
- Offices should be small, capable of seating three to four persons maximum.
- Offices should be located in high activity areas or related administrative areas.
- Where possible such offices should be flexible in use and also available to volunteers, visiting professionals, etc.
- Where more than one office is required, a waiting area may be desirable with nearby accessible washrooms, usable by staff, visitors and residents.
- Interior design and furnishing of offices should be relaxed and informal with items designed on a domestic scale. Where possible such offices should have windows to the exterior or overlook interior activity or corridor areas.

Personal Care Staff Spaces

Personal care staff may have a variety of medical and paramedical backgrounds or may be trained in other areas. Regardless of their original training, the quality of their participation in the work in a nursing home is crucial to the success of the care and activity programs.

In many communities, individual care staff may travel considerable distances to work, spend long hours doing arduous tasks, or work unenviable hours.

The morale of such staff can be supported by the provision of appropriate staff areas.

Provision should therefore be made, in all sizes of facility, for the following:

Staff washrooms
Staff locker rooms and changing space
Staff lounge(s)
Staff dining area
Staff education and meeting space
Staff parking

Standards for many of the above are covered in local regulations. However, there is rarely mention of the design concepts for such functions.

- Staff recreation, dining and lounge areas should be appropriate for leisurely conversation and social interaction. Such spaces should be identifiable and, where possible, separated from residents' areas to allow for respite from job demands.
- Staff lounges and dining areas should be located where there is a view of the outdoors, and be convenient to general circulation.
- Locker, changing rooms and washrooms may be shared with other staff, but should not be crowded or isolated to remote areas of the facility.
- Where there are residents' recreation facilities that might be of interest to staff, consideration should be given to staff use where this does not interfere with residents' programs.
- Where the staff is large, a number of different areas for personnel of each sex is desirable, with suitable access to work areas.
- Night staff require consideration, especially for meals, snacks and breaks. Provision of automatic dispensers should be considered if the staff is large enough to warrant it.

Special Equipment Storage

Because a variety of equipment is acquired by most facilities over time, especially where levels of care are high, space should be provided in individual residents' wings for storage of mobility aids (e.g. walkers and wheelchairs) as well as stretchers, over-bed tables, lifting devices, etc.

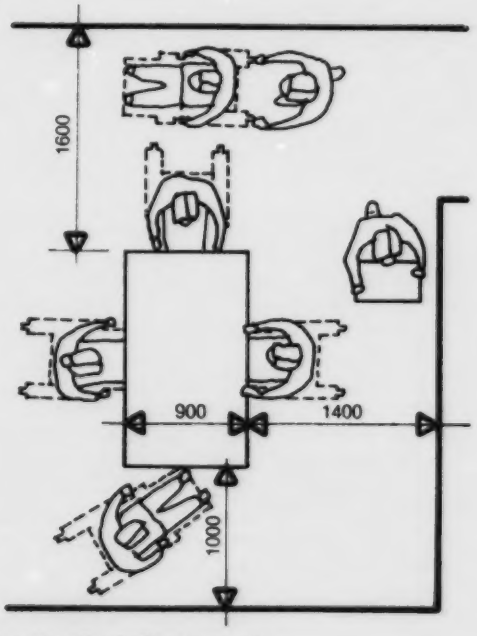
Special equipment used in treatment or therapy may also require storage close to the point of use.

Equipment used occasionally or seasonally may be stored in a general bulk storage area, providing the space is identified and can be locked.

9. Dining Areas

A central dining area which can seat all ambulant residents at one sitting is preferred.

- Large facilities may prefer to schedule two sittings. However, if this plan is chosen, enough space should be allowed to permit a minimum of 60 per cent of the residents to eat at one time. This will allow for eating preferences for various meals, visitors, etc.
- All residents should be encouraged to use the central dining facilities as often as possible.
- Supplementary dining rooms in residents' wings may be required for residents who cannot leave the wing.
- Special eating arrangements may be required for certain residents. Where residents can only eat in their rooms with assistance, space and equipment should be arranged accordingly.
- Supplementary serving kitchens may be required on residents' floors to provide individual food service to residents with limitations, and as a centre for snacks and socializing.



Dining Area Space Requirements

The main dining areas should be accessible to all residents including those with mobility problems.

A variety of table groupings of two, four, six, etc., should be provided to encourage socializing.

Layout of furniture and equipment should permit rearrangement for the variety of meals and special occasions that occur in a residential facility:

- Regular meals
- Seasonal celebrations
- Birthdays and anniversaries
- Banquets, etc.

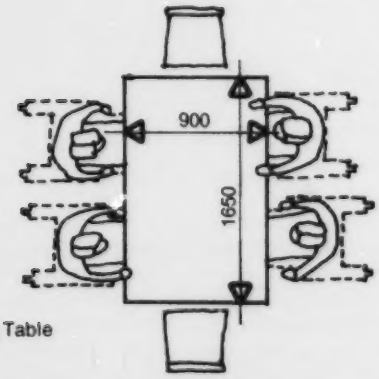
Meal service may vary and the dining and serving areas should be able to accommodate:

- Self-serve cafeteria style
- Assisted self-service
- Table service

A variety of meals may be served: meal service may be hot or cold; tables may be laid with certain items for individual meals of the day. Clean-up and rearrangement of tables, etc., must be considered for these situations.

Space should be designed to accommodate residents who arrive early for a meal or sitting, or who wish to socialize before or after a meal.

The dining room furniture and layout should be designed to accommodate wheelchair users and should be appropriate for a variety of meal services. A proportion of dining room tables should be modular so that they may be grouped to form a larger or longer table. Seating should be stable and able to support the unevenly distributed weight of elderly or handicapped persons, during sitting and transferring.



Dining Table

Floor finishes in dining areas should be selected to satisfy the following criteria:

- Ease of maintenance
- Comfort
- Acoustical value
- Visual appeal
- Non-slip
- Glare reduction

It should be possible to vary the lighting in dining areas to suit a diversity of meal services, special occasions and the time of day, and the lighting should be complementary to any natural sources of light.

The ceiling system should satisfy the following criteria:

- Adaptable to various lighting arrangements.
- Acoustical quality should limit intrusive noise, but allow for normal conversation.
- Lighting sources should not produce glare spots or areas of high contrast and shadow.
- Room scale should be such that small and large groups of persons can feel comfortable.

Staff dining may be provided in main dining room or as an adjunct or separate space. Where dining areas are contiguous, provision for a divider is desirable for staff eating on different shifts, and to allow some privacy for staff during off-duty periods.

Depending on the total number of residents, supplementary space may be required for vending machines, especially for snacks and coffee breaks unrelated to the regular food service program. Circulation space around vending areas should be unobstructed and machines should be accessible to all potential users, i.e., staff, residents and visitors.

Visitors' rooms or parlours should have access to or include space for preparation and serving of light meals and snacks.

Accessory space to dining areas might also include exterior dining space for summer meals, snacks, picnics and barbecues. Such areas should be accessible to both dining and serving areas and to public circulation routes.

Positive ventilation of dining areas is required along with appropriate heating. These areas should be comfortable whether full or empty. The ventilation system should be designed to minimize air-flow over meals or seated residents.

The meal service program should be planned to ensure a good "fit" between building spaces (e.g., dining room and main kitchen) as well as between administrative policies, economies and residents' capability levels.

10. Community Use Areas

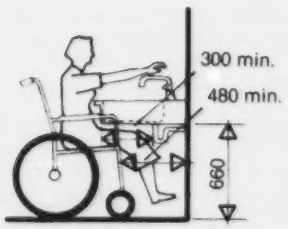
Areas and programs that can be used by the community, and by volunteers who come to the facility on a day or part-time basis, foster interaction that can be beneficial to all.

Areas that might be considered for shared use include the following:

Senior citizens' centre
Day care centre for senior citizens
Auditorium or multi-purpose room
Library
Chapel
Beauty and barber shop
Social and recreational services
Health care monitoring (e.g., treatment or care areas, plus administrative areas)
Central dining room
Coffee shop or tuck shop
Craft rooms
Occupational therapy areas and workshops
Physiotherapy areas, whirlpool, etc.
Outdoor activity areas, balconies and decks
Main lounges
Parlours
In-training areas
Equipment or bulk storage areas

To make these areas available and attractive to visitors from the community, access to transportation is critical and should be identified at the programming stage.

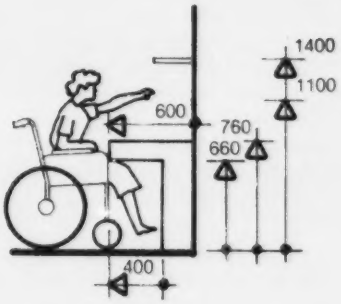
- A separate entrance to large multi-purpose or meeting areas may be desirable, with level access from parking and unloading areas.
- Washrooms and cloakrooms adjacent to the entry areas are desirable for the maximum number of users anticipated.
- A supplementary kitchen for serving snacks or special meals may be desirable.

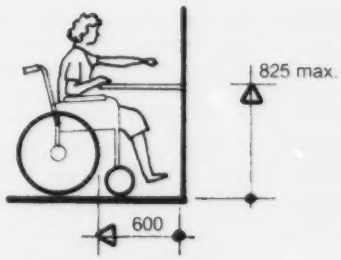


Wheelchair at Kitchen Sink

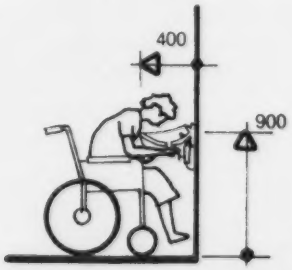
N.B. Waste traps should be insulated if they intrude into the kneespace, or the temperature of the water available should be reduced to prevent burns.

- An office for a community co-ordinator and work space for volunteers are desirable.
- Provision of space for special or supplementary staff from the community should be considered.





Knee Recess for Chairbound



Drinking Fountain for Chairbound People

- Storage space for chairs and equipment should be provided.
- Communication systems within the facility and to the community should be considered.
- Areas used by the public should generally maintain their territorial integrity. Residents of the facility should not feel that private space is being intruded upon.

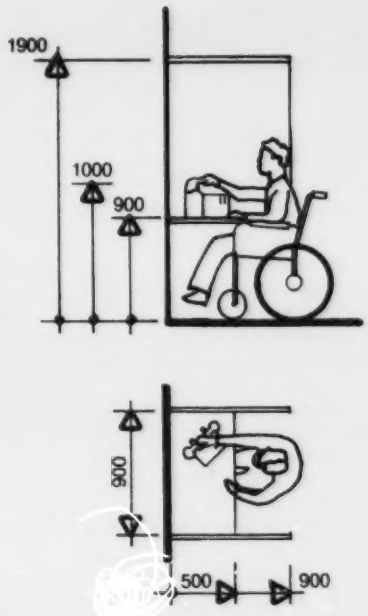
- Storage space accessible to outdoor activity areas is desirable for seasonal furniture and equipment.
- An arrangement that allows for residents' participation, with the opportunity of retreating to their own areas, is to be preferred.
- Consideration should be given to the variety of activity that may be developed with the community. This could include:
  - Daytime activity
  - Evening activity
  - Weekend activity
  - Occasional use
  - Seasonal use
- To accommodate this activity, the facility should provide flexible heating, lighting and communication systems which allow for part-time use. Housekeeping, general maintenance and supervision of these areas should be considered.

11. General Administration

The precise needs of the administration of a facility should be identified during the programming stage. These needs will largely be determined by the size and complexity of the facility, the levels of care provided and the resources available in the community or in satellite facilities.

In addition to daily administrative functions carried out by the administrator and general office staff, the following activities should also be considered:

- Central information and communications
- Duplicating and storing paper, forms, etc., and production of newsletters, etc.
- Central records filing
- Storage of permanent records and residents' valuables
- Monthly and seasonal auditing and bookkeeping
- Receiving and sending mail
- Receiving and sending residents' parcels
- Receiving and handling residents' cleaning or purchases
- Receiving and handling of residents' finances
- Meetings of staff, board, or volunteers
- Interviews with staff, residents, visiting professionals and community personnel
- Staff and visitors' washrooms and coat space
- Visitors' and residents' waiting areas
- Public telephones for use by visitors and residents



Public Telephones for Wheelchair Users.
N.B. Max. height for wall mounted telephone 1200 mm to centre of dial.

The administrative area, as identified earlier, is often located close to the main entry to the building, especially in small facilities. While it may be desirable to allocate space for some of the above functions away from the hub of activity, communications are often better where such areas are contiguous. Since the demands of record keeping and financial accountability will continue to increase, potential for flexibility and expansion may be critical to the administrative areas.

- Supplementary community programs, home care services, volunteer participation, etc., will all place demands on administrative space. Expansion for private offices for the following should be considered:
  - Assistant administrator
  - Activities director
  - Resident placement officer
  - Accountant
  - Doctor or health director
  - Head of nursing and care staff
  - Volunteer or community coordinator
- Supplementary offices need not be designated to each function and can be shared. However, the role and functions of each should be considered and appropriate working and storage space provided.

12. Central Kitchen

The central kitchen in any facility must provide a variety of meals, diets and supplementary snacks or nourishment to both residents and staff. Where a facility offers direct or indirect services or meals to the community, the size of the kitchen and adjunct storage and serving spaces, etc., will be affected.

Kitchens should be designed with enough space for the following functions:

Bulk food storage
Cold food storage, dairy and vegetable
Freezer storage, meat, etc.
Dry goods storage
Preparation space
Cooks' ancillary functions
Cooking
Pot washing
Dishwashing
Cart washing
Cart storage
Special diet preparation
Serving
Storage for in-use dishes, etc.
Storage for supplementary equipment, e.g. mixers, slicers, toasters, potato peelers, coffee urn, milk dispenser, etc.

- Total kitchen size, shape and organization will be the result of an analysis of the food service to be provided, the number and variety of meals to be served, the number of sittings for meals, general traffic flow in the building, etc., all of which should be determined during programming.
- Kitchens in facilities serving 50 or more persons, should contain a small office for the food supervisor or dietician.
- Serving areas should be flexible to permit bulk food service (cafeteria style), waitress food service and cart or tray service to supplementary dining areas.
- Where food service is provided directly to the community, direct access routes from the kitchen-serving area should be planned, with space for loading, pick-up and return.
- Space should be provided for returning carts and dishes.
- Circulation space for carts should be provided in all areas where they may be used.
- The wash-up area should be designed to minimize the noise carried to dining and other activity areas.
- Adequate ventilation should be provided to all working and storage areas of the kitchen.
- Kitchen and related work areas should preferably have exposure to an exterior wall with windows.
- All floor, wall and equipment surfaces should be selected for minimum maintenance and maximum sanitation.
- Kitchen floors should be of non-slip material under wet or greasy conditions, and should be easily drained.
- Bulk deliveries to the kitchen and kitchen stores should be routed so that supervision and control of goods is ensured.
- Storage areas should be equipped with movable, easily maintained, modular shelving.
- Entry to storage areas, refrigerators, etc., should be level.
- Staff washrooms and locker rooms should be easily available to kitchen staff of both sexes.
- The size of the garbage storage room should be appropriate for the facility and for the schedule of pick-ups. Such a room should be well ventilated and drained. Where garbage is to be stored for more than three days, the garbage room should also be well insulated and refrigerated.
- Floor and wall finishes in garbage rooms should be easy to maintain and waterproof.
- Facilities for washing down garbage rooms and cleaning cans, etc., should be provided.
- Garbage removal and pick-up should preferably be direct to service loading areas.
- A janitor's room should be nearby for clean-up purposes.

13. Central Laundry

A central laundry for bed linen, major items of residents' clothing, uniforms, etc., is desirable where convenient, economical community services are not available.

- The laundry should be sized to accommodate expected work loads, which should be estimated during the programming stage.
- The type of linen service that will be provided to residents' wings should be decided at the programming stage.
- Equipment for bed linen, etc. should be selected from commercial lines of equipment.
- Soiled linen, clothing, etc., may require special handling and treatment; space for sorting, pre-rinse, etc., should be considered.
- Space should be provided for folding and storing clean linen on carts or shelves in a separate area from soiled linen.
- The laundry room should be well ventilated and have finishes that are easy to maintain.
- Lighting levels should be appropriate to the tasks performed.
- Consideration should be given to the visual environment of the laundry, especially if it is to be used for more than a few hours daily.
- Where supplementary laundry services are provided to the community, easy access for carts and bulky items should be available for transporting items from service area to laundry.
- Locked storage should be provided for clean linen and new items, seasonal items, etc., to minimize losses.

14. Central Housekeeping

Housekeeping in most facilities is an independent function and requires special consideration during planning. Space should be provided for the following:

Cleaning supplies
Paper goods and bulk storage
Ancillary storage of supplies
Cleaning equipment, e.g. mops, vacuums, scrubbers, etc.
Workroom or office
Clean-up area

Where housekeeping is combined with janitorial and maintenance particularly in smaller facilities, accommodation should be provided for combined usage.

The functions of the housekeeping department should be determined during the programming stages. They may include some or all of the following:

- General day-cleaning of resident rooms and adjacent areas
- General day-cleaning of activity and communal areas
- General day-cleaning of administrative areas
- General cleaning of special areas, e.g., kitchen, laundry, etc.
- Seasonal cleaning of all spaces identified above, including the replacement of drapes, furnishings, etc.
- Storage and repair of the above

Space is required to carry out the above regular functions as well as for keeping an inventory of general supplies used by the facility.

Responsibility for the ordering and receiving of all supplies should be established during the programming stages, including:

Housekeeping supplies
Special diet supplies
Maintenance supplies
Medical supplies
Administrative supplies
Supplies for activities

Central housekeeping space should be located in clean, well-lit areas, appropriate to the function identified. Such spaces should be accessible to all areas of the building, including supplementary housekeeping areas, and administrative and communication functions.

15. Central Maintenance

Central maintenance is concerned with the building and grounds. The following activities should be reviewed:

- Site and landscaping maintenance
- Janitorial services, general
- Heating plant maintenance
- Electrical equipment maintenance
- Mechanical equipment maintenance
- Special equipment maintenance and repair
- Furniture and fixtures maintenance and repair
- Grounds maintenance
- Decoration and repair of interior and exterior surfaces
- Collection and disposal of garbage

Areas provided to accommodate these functions may include the following:

- Boiler room and electrical room
- Fan room (penthouses, etc.)
- Central janitors storage
- Maintenance office
- Workshop (carpentry and metal work)
- Equipment and furniture storage
- Garage
- Exterior equipment storage

Staff employed to carry out maintenance functions are usually distinct from care staff, but in small facilities may be combined with housekeeping staff and their functions. Such staff need the same amenities as other care and administrative personnel including washrooms, locker rooms, lounge or sitting space, dining facilities, office space for ordering supplies, receiving space for goods and holding spaces for stores, garbage, equipment etc.

The location of maintenance areas should be considered in the overall planning. Easy access is required to all parts of the building and grounds, including vertical and horizontal circulation systems.

A separate entrance is desirable for receipt of bulk goods and removal of garbage.

Easy access from central maintenance areas to the service loading area or dock is critical.

A communications link is required, communications from the central system to the community, administration, housekeeping, laundry and the kitchen, as well as to the receiving area.

Care must be taken to ensure that working areas for central maintenance staff are appropriate, well-lit, heated and ventilated.

Spaces related to outdoor grounds activities should be accessible from the interior as well as the exterior, should not be remote and should be large enough to satisfy storage and maintenance requirements.

Consideration should be given to making built-in mechanical and electrical equipment accessible for regular maintenance.

16. Service and Delivery

Access routes to and from the building will largely be determined by site constraints. Service and delivery issues relevant to the building and its uses must be determined during the programming stage. Consideration should be given to the following:

- Bulk goods delivery for kitchen, etc.
- Furniture delivery
- Equipment delivery
- Maintenance supplies delivery and pick-up
- Parcel delivery
- Laundry and dry-cleaning delivery and pick-up
- Medical supplies delivery
- Office supplies delivery
- Garbage removal
- Fire route access
- Movement of special vehicles, e.g., private buses, vans, special cars
- Movement and parking of staff vehicles, e.g., vans, station wagons, etc.
- Garage access
- Ambulance and mortuary vehicle access
- Public transport vehicles
- Movement and parking of visitors' and volunteers' vehicles
- Location of loading docks and service vehicle areas

Traffic routes for service and other vehicles and pedestrian movement
Prevailing winds, bringing rain or snow
Snow accumulation and removal
Grading of roadways, walks, etc.
Location of exterior catchbasins, etc.
Location of exterior lighting, planting, seating, activity areas, signs, etc.

Where site space is available, every attempt should be made to separate the movement of service vehicles from resident or visitor access routes, especially pedestrian.

The location of service access areas, loading docks, etc., should suit the internal arrangement of the facility as well as major access points of the site.

In loading and unloading areas, protection should be provided from the elements, particularly wind-driven snow and rain.

Adequate drainage of paved surfaces should be provided, and grades should be appropriate for all sizes and weights of service vehicles.

Adequate lighting should be provided in loading and unloading areas and service staff access routes.

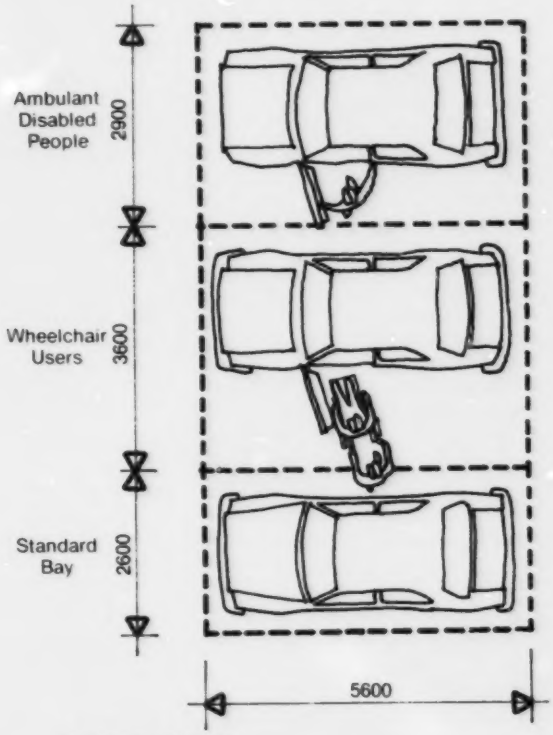
Loading dock areas should accommodate a minimum of two service vehicles, one of which could be a tractor-trailer.

Loading dock and bumper height should be appropriate for a variety of rear or side loading vehicles.

Short-term parking space for delivery vehicles should accommodate postal delivery, small commercial vans, etc., close to the required point of access without impeding the flow of other traffic.

Special buses or vans for transporting handicapped persons should have designated loading and parking areas. Such loading spaces should provide some protection from the elements.

Signs should be appropriate to all site users, both day and night.



Car Parking Spaces

Accessibility

If barrier-free design is to be achieved there are special design features that must be considered for each physical limitation. The elements of greatest concern are expressed below in chart form for easy reference.

Matrix: Exterior Accessibility

Site Elements* Requiring Consideration	Physical Limitation								
	Frailty Endurance	Walking Impairment	Walking Aid	Wheel-chair	Manual Impairment	Sight Impairment	Hearing Impairment	Multiple Sensory Losses	Orientation Impairment
Paved Surfaces	o	o	o	o		o		o	
Natural Surfaces	o	o	o	o		o		o	
Curbs		o	o	o		o		o	
Intersections			o	o		o	o	o	o
Obstruction at Grade	o	o	o	o		o		o	
Vertical Obstructions				o		o		o	
Ramps	o	o	o	o	o	o		o	
Stairs	o	o		o	o	o		o	
Handrails	o	o		o	o	o		o	
Enclosures					o	o		o	o
Drop-off Zones		o	o	o		o		o	
Parking Areas		o	o	o		o		o	o
Waiting Areas	o	o	o	o		o	o	o	o
Sitting Areas	o	o	o			o		o	
Recreation Areas			o	o		o		o	o
Planting			o	o		o		o	
Lighting		o	o			o		o	
Signs				o		o	o	o	o
Drinking Fountain	o		o	o	o	o		o	

*Appropriate design solutions are those which satisfy each of these accessibility requirements.

Interior Accessibility

Interior Elements Requiring Consideration	Physical Limitation								
	Frailty/ Endurance	Walking Impairment	Walking Aid	Wheel-chair	Manual Impairment	Sight Impairment	Hearing Impairment	Multiple Sen-sory Losses	Orientation Impairment
Horizontal Circulation	o	o	o	o		o			o
Vertical Circulation	o	o	o	o	o	o		o	o
Floor Finishes	o	o	o	o		o			o
Wall Finishes			o	o	o	o		o	o
Living Spaces		o	o	o	o	o			
Dining Spaces		o	o	o		o			
Recreation Spaces	o	o	o	o	o	o	o	o	o
Bathing Facilities	o	o	o	o	o	o		o	
Toilet Facilities		o	o	o	o	o		o	
Kitchens	o	o	o	o	o	o		o	
Storage Units	o	o	o	o	o	o			o
Exits	o	o	o	o	o	o			o
Vertical Obstructions		o	o	o		o			o
Intersections			o	o		o			o
Windows	o			o	o				o
Doors	o	o	o	o	o				o
Acoustics						o	o	o	o
Lighting						o		o	o
Heating	o							o	
Humidity Control	o							o	
Cooling	o	o						o	
Water Temperature	o				o			o	
Fire Alarms	o					o	o	o	o
Communication Systems	o			o	o	o	o	o	o
Public Address System						o	o	o	o
Information						o	o	o	o
Signs				o		o	o	o	o

Siting Criteria

Location

Sites selected for use by elderly residents, regardless of their health, should be located in an active community context. Care should be taken to ensure that public transportation is available for residents, staff and visitors, to permit a high level of interaction between the nursing home and the community.

Many residents will want to continue to participate in local community and family activities, including churches, clubs, shopping, and visiting with friends and relatives.

Distances to be travelled by public transportation, as well as walking distances which can be managed by the elderly in all weather conditions, are critical.

Relationship to Neighbours

Sites must be selected to ensure compatibility with neighbours. The generation of interest in the early planning stages will often ensure the continuing participation of the community, and offset any negative feelings about "institutional" settings. Volunteers from the community play an important role in the success of facilities for the elderly.

Vehicular Traffic

A clear separation on the site must be made between vehicular and pedestrian traffic. Vehicular traffic will consist of the following:

- Staff cars
- Visitors' cars
- Delivery vehicles (bulk goods and small packages)
- Garbage collection vehicles
- Snow-clearing vehicles
- Fire trucks
- Taxis
- Handicapped transit vehicles
- Bus, van or cars for residents' use

In addition to access roads which allow passing, adequate turning circles must be provided on the site plus designated parking and unloading areas.

Sufficient space should be allowed for snowplowing and snow dumping, depending on climatic region.

Areas for vehicle traffic must be designed to ensure good run-off of surface water, away from pedestrian routes, and to minimize areas of standing water which will freeze in cold weather. Gradients should be gentle. Where specific problems are encountered, radiant heating coils or other devices should be used to maintain safe access in all weather.

Wider parking spaces should be provided close to the main entrance for handicapped users' vehicles, both for unloading and parking, with an unobstructed pedestrian route to the main entrance area.

Landscape Design

Exterior areas of the site should be planned and landscaped to encourage a variety of outdoor activity, for groups or individuals. Planting, trees, pools and seating areas should be organized with handicapped elderly users in mind and should, therefore, be fully accessible to the main areas of the building.

A good landscape design will ensure visual diversity at all times of the year, with a variety of flowering shrubs, perennials and trees.

Areas protected from both sun and wind should be created outdoors for casual sitting. Care should be taken to ensure that these offer views of both community activity and the main entrance as well as secluded areas.

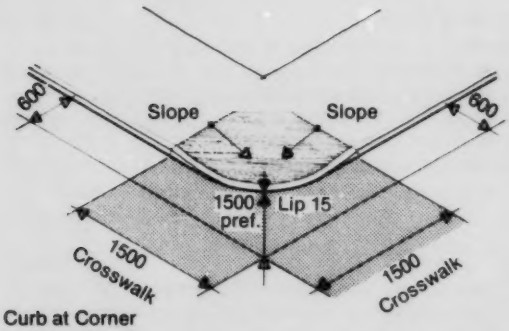
Recreational aids should be built into exterior areas. To encourage activity, areas should be developed for games, barbecues, picnics, etc.

In dense urban settings, care should be taken to ensure the protection of residents' outdoor areas from unwanted intrusion. Judicious use of fences, screens and planting, and an understanding of neighbourhood use patterns, will assist in providing both privacy and security where needed.

Accessibility

Access for fire fighting vehicles must be created. This may be incorporated unobtrusively in landscaped areas through use of wider walkways.

Changes in level due to sloping terrain, or developed as a design feature, should not prohibit the use of the site by handicapped residents. Ramps and inclined walks should be used to accommodate these changes in level.



Curb at Corner

Since evening and night use of exterior areas can be expected, lighting should be adequate to ensure safety and visibility in areas of high use. Decorative exterior lighting may also be desirable to enhance the view from the building at night.

Access to site entrances, should be planned to be compatible with adjacent road and highway uses. Suitable signs at the site entrance and directional signs throughout arrival and parking areas will help to ensure the safe arrival and departure of all users.

Site set-backs, zoning requirements and services should be clearly established during the design stage. Provision should be made for future expansion, wherever possible, to accommodate both additions to and changes in programming.

Where buildings are being added, or adjacent facilities shared, care should be taken to ensure level connections to floor levels, walkways, etc.

Site Analysis

Both old and new sites should be surveyed to provide accurate information regarding boundaries, levels, soil conditions, existing facilities, the location of planting and major trees as well as any special features that might affect the planning of new buildings.

The orientation of the site will greatly affect the final solution. Care should be taken, therefore, to ensure that a site offers no unmanageable problems with regard to wind, snow or rain, and that residential units and activity areas can be organized to take best advantage of the sun during most of the year.

Sites offering spectacular views are worthy of special consideration, and where they satisfy all other criteria can be especially desirable. However, no site should be selected for this reason alone.

Some sites have specific problems due to noise or traffic. A careful analysis of these factors should be made to ensure that a satisfactory solution can be arrived at.

The economics of land acquisition may be critical since high cost here will significantly affect the unit cost of the facility. Additional costs for regrading or poor soil conditions will also affect the total capital cost and should be considered.

Adjacency

Organization of components within the proposed facility should be determined by an evaluation of the desired relationship among them. The functional program will identify some adjacency preferences; others will be determined as the design process evolves.

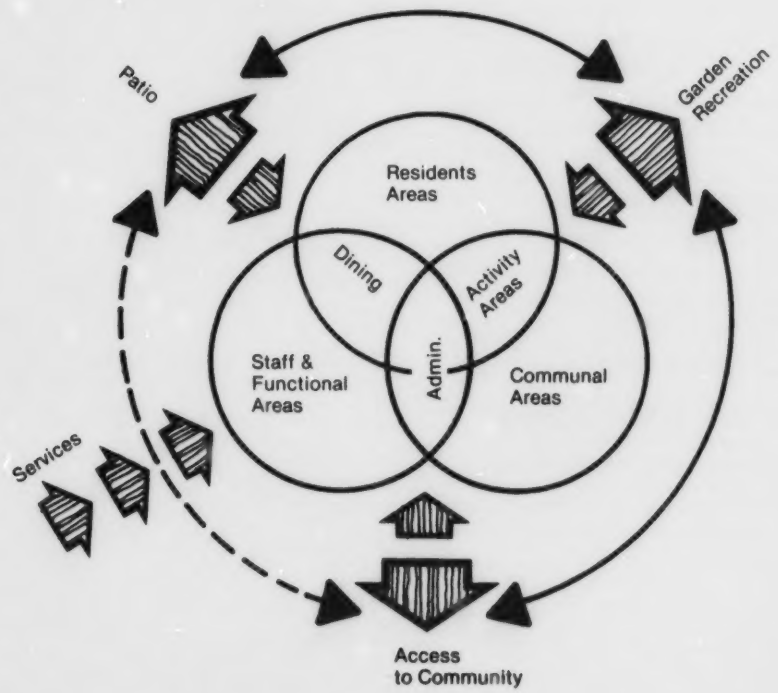
In setting an architectural program for rehabilitation work as well as for new design a hierarchy of values should be used to establish priorities:

- Interrelationship of the elements for efficiency in carrying out living activities, e.g., travel distances and flow patterns
- Proximity of service areas to related activity areas, e.g., dining to kitchen areas
- Staffing patterns, i.e., options in the composition of staff to achieve various levels of performance.

A residential care facility for the elderly can be broken down into the following major functional entities. Relationships among these entities must be identified and ordered:

Interior Areas
Residents' personal living areas
Residents' activity areas
Residents' communal living areas
Personal care areas
Administrative areas
Staff amenity areas
Housekeeping and maintenance areas
Diet preparation areas
Storage areas
Interior circulation space

Exterior Areas
Residents' and visitors' arrival areas
Service areas
Exterior circulation space
Residents' recreational areas
Special purpose exterior areas
General landscaped space



Aesthetic Considerations

In the past, architectural design for group living has often been dominated by institutional concepts both in scale and selection of materials.

Residential Scale

The current philosophy of design for housing for the elderly requires that solutions be residential in character and scale, appropriate to the residential communities in which they are situated.

Context

The urban or rural nature of the setting, as well as the size of the site and its relationship with neighbouring facilities, should be recognized in the design process.

Regional variations in climate and terrain as well as the architectural idiom of the region should all be considered.

Materials

External and internal materials, detailing, interior design and landscaping, all serve to indicate to users and visitors alike whether the building is a home or an institution. Materials and finishes must be psychologically appropriate, and should be selected with long-term maintenance in mind.

A facility designed for future expansion should use materials that can be matched or complemented over a span of years.

Architect's Role

The ability to serve, or to exert power over, the future residents of a facility through manipulation of the built environment is in the architect's hands. The architect must therefore be sensitive to the scale of activity within the building, the nature of its users and the building's importance to the community.

A variety of spaces and visual stimuli should be provided for elderly residents as well as areas appropriate to their life style. Management and health care needs should not preempt these criteria.

The Sponsor's Role

The desire of a community or a sponsoring group to make a statement should not be the reason for creation of an architectural monument, inappropriate to the users, the elderly themselves.

Where financial circumstances permit, it is an advantage to hire the future director of the institution in the early phase of design. This allows the sponsor and architect to benefit from the director's experience. The philosophy for the facility should be clearly stated and consensus reached among all parties regarding the goals to be attained.

Space Requirements

In the following charts the symbols used denote the following:

- • Recommended for effective and efficient use of the facility.
- * Optional, i.e., may be recommended in some cases but the requirement depends on design options adopted and the trade offs available as alternatives to satisfy the needs of those who use the facility.
- — Not essential, i.e., the facility can function without it.

Interior Spaces for Nursing Homes and Hostels with Care for the Elderly

	Nursing Homes				Hostels		
	Up to 30 residents	30-75	75-150	150-200	Up to 50 units	50-100	100-200
Residential Areas							
Bedrooms	•	•	•	•	•	•	•
Primary Day Space	•	•	•	•	•	•	•
Secondary Sitting Areas	*	•	•	•	*	•	•
Kitchenette, En Suite	—	—	—	—	*	*	*
En Suite Washroom, 2-Piece	•	•	•	•	*	*	*
En Suite Washroom, 3-Piece	—	—	•	•	•	•	•
Wheelchair Shower	•	•	•	•	—	•	•
Bathroom(s)	*	*	•	•	*	*	*
Residents' Laundry	*	•	•	•	•	•	•
Corridors	•	•	•	•	•	•	•
Activity and Resource Areas							
Lounge(s)	•	•	•	•	•	•	•
Separate T.V. Lounges	*	•	•	•	*	•	•
Visitors' Room	—	*	•	•	*	•	•
Kitchenette, Shared	•	•	•	•	•	•	•
Chapel	—	•	•	•	—	—	*
Crafts Room	—	•	•	•	*	•	•
Games Room	—	•	•	•	*	•	•
Occupational Therapy Area	—	•	•	•	—	*	•
Auditorium	—	—	*	*	—	—	*
Multi-Purpose Room(s)	•	•	•	•	•	•	•
Senior Citizens' Centre	—	—	*	•	—	*	•
Sauna and Changing Area	—	—	*	•	—	*	•
Greenhouse	—	—	*	•	—	—	*
Music Room	—	—	*	*	—	—	*
Library	—	*	•	•	*	•	•
Beauty Shop	—	*	•	•	—	*	•
Barber Shop	—	*	•	•	—	*	•
Snack Bar / Tuck shop	—	•	•	•	—	*	•
Swimming Pool	—	—	—	*	—	*	*
Ancillary and Housekeeping Areas							
Central Kitchen	•	•	•	•	•	•	•
Central Dining	•	•	•	•	•	•	•
Additional Dining Rooms	—	*	•	•	—	*	•
Bulk Storage (Kitchen)	•	•	•	•	•	•	•
Day Storage (Kitchen)	•	•	•	•	•	•	•
Central Laundry	*	*	•	•	*	•	•
Linen Storage	•	•	•	•	•	•	•

(Chart continued on following page.)

	Nursing Homes				Hostels		
	Up to 30 residents	30-75	75-150	150-200	Up to 50 units	50-100	100-200
Housekeeping Office/Workspace	•	•	•	•	•	•	•
Housekeeping Storage	•	•	•	•	•	•	•
Janitors' Storage/Workspace	•	•	•	•	•	•	•
General Storage	•	•	•	•	•	•	•
Administrative Areas							
Administrator's Office	•	•	•	•	•	•	•
General Office	•	•	•	•	•	•	•
Administrative Storage	•	•	•	•	•	•	•
Waiting Area	•	•	•	•	•	•	•
Nurses' Administration Office	•	•	•	•	•	•	•
Staff Dining	—	•	•	•	—	•	•
Staff Lounge	•	•	•	•	•	•	•
Staff Washrooms and Locker Rooms	•	•	•	•	•	•	•
Visitors' Washrooms	•	•	•	•	•	•	•
Visitors' Coats	•	•	•	•	•	•	•
Reception	•	•	•	•	•	•	•
Lobby and Waiting Area	•	•	•	•	•	•	•
Staff Training	—	•	•	•	—	•	•
Volunteer Space	—	•	•	•	—	•	•
Physical Plant and Storage							
Garage	—	•	•	•	—	•	•
Outside Storage	•	•	•	•	•	•	•
Trunk Storage	•	•	•	•	•	•	•
Seasonal Clothing Storage	•	•	•	•	•	•	•
Furniture Storage	•	•	•	•	•	•	•
Garbage Storage	•	•	•	•	•	•	•
Cart/Can Wash	•	•	•	•	•	•	•
Boiler/Mechanical Room	•	•	•	•	•	•	•
Electrical Room	•	•	•	•	•	•	•
Workshop	—	•	•	•	•	•	•
Loading Dock and Receiving Area	•	•	•	•	•	•	•
Care and Treatment Areas							
Institutional Bathroom	•	•	•	•	—	•	•
Therapeutic Bath, Whirlpool Type Tub	•	•	•	•	—	•	•
Sick Bay	•	•	•	•	•	•	•
Nurses' Station	•	•	•	•	•	•	•
Nurses' Office	•	•	•	•	•	•	•
Medication Preparation	•	•	•	•	•	•	•
Locked Drug Storage	•	•	•	•	•	•	•
Examination and Treatment Room	•	•	•	•	—	•	•
Doctors' Office	•	•	•	•	•	•	•
Morgue	—	—	•	•	—	—	•
Professional Offices	—	•	•	•	—	•	•
Special Wheelchair Shower	•	•	•	•	•	•	•
Quiet Room	•	•	•	•	—	•	•
Physiotherapy Area	—	•	•	•	—	•	•
Day-Care Centre	—	—	•	•	—	—	•

• Recommended • Optional — Not Essential

Exterior Spaces
for Nursing Homes and Hostels with Care for the Elderly

	Nursing Homes				Hostels		
	Up to 30 residents	30-75	75-150	150-200	Up to 50 units	50-100	100-200
Private Patios	—	•	•	•	•	•	•
Balconies and Roof Decks	•	•	•	•	•	•	•
Public Patios	•	•	•	•	•	•	•
Landscaping	•	•	•	•	•	•	•
Walkway System	•	•	•	•	•	•	•
Sitting Areas	•	•	•	•	•	•	•
Recreation Areas	•	•	•	•	•	•	•
Residents' Garden	•	•	•	•	•	•	•
Residents' Parking	—	—	—	•	•	•	•
Visitors' Parking	•	•	•	•	•	•	•
Bus Parking	•	•	•	•	•	•	•
Drop-Off Zone	•	•	•	•	•	•	•
Staff Parking	•	•	•	•	•	•	•
Receiving Area	•	•	•	•	•	•	•

• Recommended • Optional — Not Essential

Detailed Space Requirements

Suggested Space Allocations

In determining actual space requirements, care should be taken to cross-check information in this document with specific regional or other requirements.

In the following tables, spaces considered optional to the individual program are identified by an asterisk. Spaces considered solely part of the care component, as distinct from the residential, are identified in the preceding section.

The concept of hostels in this guideline includes facilities with bachelor suites, complete with en suite bathing and kitchen facilities, as well as groups of individual bedrooms with shared bathing facilities.

Nursing home solutions will vary widely, depending upon the ratio of care levels and the total number of residents.

Care and Treatment Areas **	**Suggested Net Areas Square Metres**	
Range: 30-150 Persons	**30**	**150**
Institutional Bathroom(s)	8.4	2 @ 8.4
*Therapeutic Bath, Whirlpool Type Tub	*	*2 @ 10.0
Sick Bay (Minimum 1 bed per 50 persons)	10.0	32.5
*Nurses' Station(s)	*	*3 @ 10.0
*Nursing Office in Residents' Wing	*	*8.4
Medication Preparation and Storage	*	3 @ 5.6
Examination and Treatment Room	*	11.0
Doctor's Office	*	8.4
*Quiet Room	*10.0	10.0
Morgue	N/A	*11.0
*Professional Offices	*8.4	*8.4 ea.
Wheelchair Shower, 1 per 50 Residents	3.3	3 @ 3.3
Physiotherapy Area	*	30.0

**N.B. Care and treatment areas may be required primarily for Levels II and III care. Need should be analyzed at programming stage.

*Optional space or facility, recommended where space and financing permit.

Shared Activity Areas Usable by Residents and Community **	**Suggested Net Areas Square Metres**	
Range: 30-150 Persons	**30**	**150**
*Visitors' Washrooms (facilities with more than 50 residents)	*2.8	*5.6
Visitors' Coat Space	1.2	2.8
*Separate Entrance Lobby & Waiting Area	*	*14.0
Volunteers' Office Space	8.4	16.8
*Auditorium (1.2 m^2 per person)	*	*180.0
*Senior Citizens Centre (1.4 m^2 per person)	*	*186.0
*Day-Care Centre (2.0 m^2 per person)	*	*
*Convenience Store	*	*28.0
*Kitchenette for Senior Citizens' Centre or Auditorium	*	*14.0
*Equipment Storage	*	*10.0
*Chair Storage	*	*10.0
*Swimming Pool and Changing Room Facilities (for pool size 12 m x 7.5 m approx.)	N/A	*280.0

*Optional space or facility recommended where space and financing permit.

**Increase visitors' washroom and coat space requirements if senior citizens' centre/day-care centre or auditorium are added to project.

Residents' Activity Areas	Suggested Net Areas Square Metres	
Range: 30-150 Persons	**30**	**150**
Separate T.V. Lounge(s)		28.0
Visitors' Room	10.0	14.0
*Chapel	N/A	*46.0
Games Room	N/A	28.0
Crafts Room	N/A	28.0
Occupational Therapy Area	N/A	28.0
**Central Dining Room(s) (1.4 m^2 per resident approx.)	42.0	210.0
*Exercise Area***	*14.0	N/A
Library	10.0	24.0
Multi-Purpose Room(s) (1.12 m^2 per resident approx.)	*34.0	180.0
Residents' Meeting Room	N/A	18.0
Beauty Shop	N/A	14.0
Barber Shop	N/A	14.0
Snack Bar / Tuck Shop	6.0	14.0
General Storage, Chairs and Equipment	10.0	18.0
*Greenhouse	N/A	*
*Sauna and Changing Area	N/A	*
*Music Room	N/A	*

*Optional space or facility recommended where space and financing permit.

**Central dining area should preferably seat all residents at one sitting; however, in larger facilities two shifts are common.

***Exercise area will not be required if physiotherapy area is included.

Residents' Wings - Accessory Spaces	Suggested Net Areas Square Metres	
Range: 30-150 Persons	**30**	**150**
*Visitors Room/Parlour	*11.0	16.0
Residents' Laundry, shared by 10-15 residents	*10.0	10.0
Residents' Laundry, shared by 15-30 residents	*12.0	12.0
Linen Storage, Residents' Wings (15-30 residents)	5.6	28.0 (Total)
Utility Room (15-30 residents)	5.6	28.0 (Total)
Janitors' Room(s)	3.0	14.0 (Total)
Duty Station (30 residents) (Level I care)	10.0	30.00 (Total)
**Medication Preparation and Storage (30 residents)	3.3	16.0 (Total)
*Residents' Laundry, 1 washer and 1 dryer and counter space	*6.5 m^2 min. width 2.3 m	
*Residents' Laundry, 2 washers and 2 dryers and counter space	*10.0 m^2 min. width 2.3 m	
Public corridors (Level I & II Care)	1.7 m wide	
Public Corridors (Level III Care)**	2.3 m wide	
Dining Areas in Residents' Wing (Based on 1.5 m^2 per person)	As required	

*Optional space or facility recommended where space and financing permit.

**Required for Level II and III care residents.

Administrative and Staffing	Suggested Net Areas Square Metres	
Range: 30-150 Persons	**30**	**150**
Administrator's Office	11.0	13.0
General Office	11.0	20.0
Reception	N/A	7.0
**Meeting Room (Board or Staff)	*14.0	*20.0
Administrative Storage (including vault)	7.0	14.0
Waiting Area	2.4	4.8
Nurses' Administration Office	10.0	10.0
*Activities Director's Office	N/A	*10.0
*Multi-Purpose Offices / Interview Rooms	*10.0	*2 @ 10.0
Staff Dining Room	N/A	1.3 pers.
Staff Lounge(s)	N/A	20.0
Staff Locker Rooms	As required	
Staff Washrooms	As required	
Visitors' Washroom(s)	3.3	6.5
Visitors' Coat Space	1.5 m lin.	3.0 m lin.
Main Entrance Lobby and Vestibule	10.0	28.0
*Staff Training	N/A	*

*Optional space or facility recommended where space and financing permit.

**Required for Level II and II care residents.

Housekeeping/Physical Plant and Ancillary Areas	Suggested Net Areas Square Metres	
Range: 30-150 Persons	**30**	**150**
Housekeeping Office/Workspace	11.0	16.0
Janitors' Storage/Workspace	7.0	18.0
Maintenance Workshop	N/A	18.0
Central Kitchen, including Day Storage, Refrigerators, Wash-up, etc.	56.0	168.0
Bulk Storage, Kitchen	N/A	24.0
Garbage Storage (dependent on pick-up schedules)	7.0 min	14.0
Cart/Can Wash	3.3	5.6
*Laundry	*28.0	*56.0
Linen Storage - Clean (gross req'd)	16.0	46.0
Linen Storage - Soiled (dependent on laundry service)	7.0	12.0
Seasonal Clothing Storage	7.0	28.0
Bulk Storage, general	18.0	24.0
*Trunk Storage	*11.0	*28.0
*Furniture Storage	*28.0	*28.0
Loading Dock and Receiving Area	7.5	18.0
*Garage	*	*18.0
Outside Storage	10.0	14.0
Electrical and Mechanical Rooms (should be decided for each project)		

*Optional space or facility recommended where space and financing permit.

Residents' Areas	Suggested Net Areas
For All Sizes of Facility	**Square Metres**
1 Person Bedroom (excluding storage)	10.0, min. dim. 2.9
2 Person Bedroom using single beds (excluding storage)	16.8, min. dim. 2.9
*Wards, Area per Person**	*8.4, min. dim. 2.9
Bedroom Closet Storage, Per Person	0.6 x 1.8 m min.
2-Piece Washroom, 1 Person Use (ambulatory)	2.4
2-Piece Washroom, Shared Use (ambulatory)	2.8
2-Piece Washroom, 1 Person and Attendant (wheelchair)	3.8, min. dim. 1.8 m
Group Washrooms, Toilets and Basins	3.5 per toilet and basin min. dim. 3.0 m
Group Bathing, Bath or Shower Room (1-15 residents)	3.3
3-Piece Washroom with Bath (ambulatory user)	3.4, min. dim. 1.5 m
3-Piece Washroom with Bath (wheelchair user)	5.2, min. dim. 2.0 m
3-Piece Washroom with Shower (ambulatory user)	4.4
3-Piece Washroom with Shower (wheelchair user)	5.2, min. dim. 2.3 m
Living Room, 1 Person (bachelor)	11.0, min. dim. 3.0 m
Living Room, 2-Persons	14.0, min. dim. 3.0 m
*Combined Living/Dining, Bachelor	*15.0, min. dim. 2.3 m
*Combined Living/Dining, 2 Persons	*16.8, min. dim. 2.3 m
1 Hostel Unit (Bachelor Suite) With Bed Space (excluding kitchen and bathroom)	17.65, min. dim. 2.3 m
*Residents' Storage (en suite)	*2.6
*Residents' Storage, Bulk Storage (away from unit)	*0.6
*Living Room, 5-10 Persons	*18.0
*Small Lounge, 10-15 Persons	*28.0
*Larger Lounges	*1.4-1.8 m/res.
*Kitchen Alcove, Bachelor	*4.2
*Kitchen, Separate (accessible)	*5.6
*Floor Kitchen, shared by 10-15 residents	*10.0
*Kitchen Alcove, Off Lounge	*4.2
En Suite Hallways	min. 1.0 m wide
En Suite Lobbies (suitable for handicapped users)	2.4, min. dim. 1.53 m

*Optional space or facility, recommended where space and financing permit.

**Maximum ward to be sized for four persons (not recommended).

N.B.: Selection of options should be determined at programming stage, and will depend on resident capacity levels and proportions of care levels.

Suggested room sizes will accommodate handicapped residents in wheelchairs, unless otherwise noted.

Benchmarks for Gross Area Requirements

Benchmarks appropriate to the whole of Canada, or to a specific province, are difficult to establish and even more difficult to adhere to. Each community, each group of elderly residents requiring care, and each site present unique conditions which require unique solutions.

Some national trends have been identified, however, and are noted here for guidance.[1]

Nursing Homes

Nursing homes of the future will probably be required to serve three levels of care over time.

The proportion of Level III care should be kept within 25 to 30 per cent, or the facility will become dominated by care issues, which will be reflected in capital and management costs.

The move toward a higher proportion of single bedrooms, a reduction in two-bed rooms and the elimination of multi-bed wards is likely to continue. Accommodation for single occupancy should be available to a minimum of 60 per cent of all potential residents.

Groups of 10 to 15 residents' rooms should preferably be clustered with contiguous lounge spaces.

Residents' washrooms should preferably be adjacent to residents' bedrooms; these may be two-piece, occasionally three-piece. There will be less tendency to use shared or communal washrooms. Solutions that are generally well accepted use two-piece washrooms shared by two single bedrooms. Where two-bed rooms are provided, each should preferably have its own washroom en suite.

Clear space in bedrooms should meet minimum space standards, but additional space should be provided for storage of the individual resident's clothing and personal belongings. Rooms will frequently be furnished by the resident, perhaps with the exception of the bed.

Corridors in residents' wings may vary in width, depending on the level of care offered. This affects the gross area and particularly the gross/net ratio where corridors are calculated as gross area.

Ancillary spaces for residents' use will depend on the total number of residents, the spaces allowed, the variety of programs offered, and the range of care areas provided. All these variables will have an effect on the total gross area.

Economies of scale can be achieved in facilities serving 75 residents or more, once the ratio of accessory space to residential space is established.

The scope of services offered to community residents will also affect space requirements for both staff and activities.

Care must therefore be taken in overall planning to ensure that the gross/net ratio is reasonable for the scale and complexity of the facility, while satisfying program needs.

In limited residential facilities the grossing factor will be in the order of 30 per cent. However, as components are added or specific site and other requirements are met the grossing factor may go as high as 45 per cent.

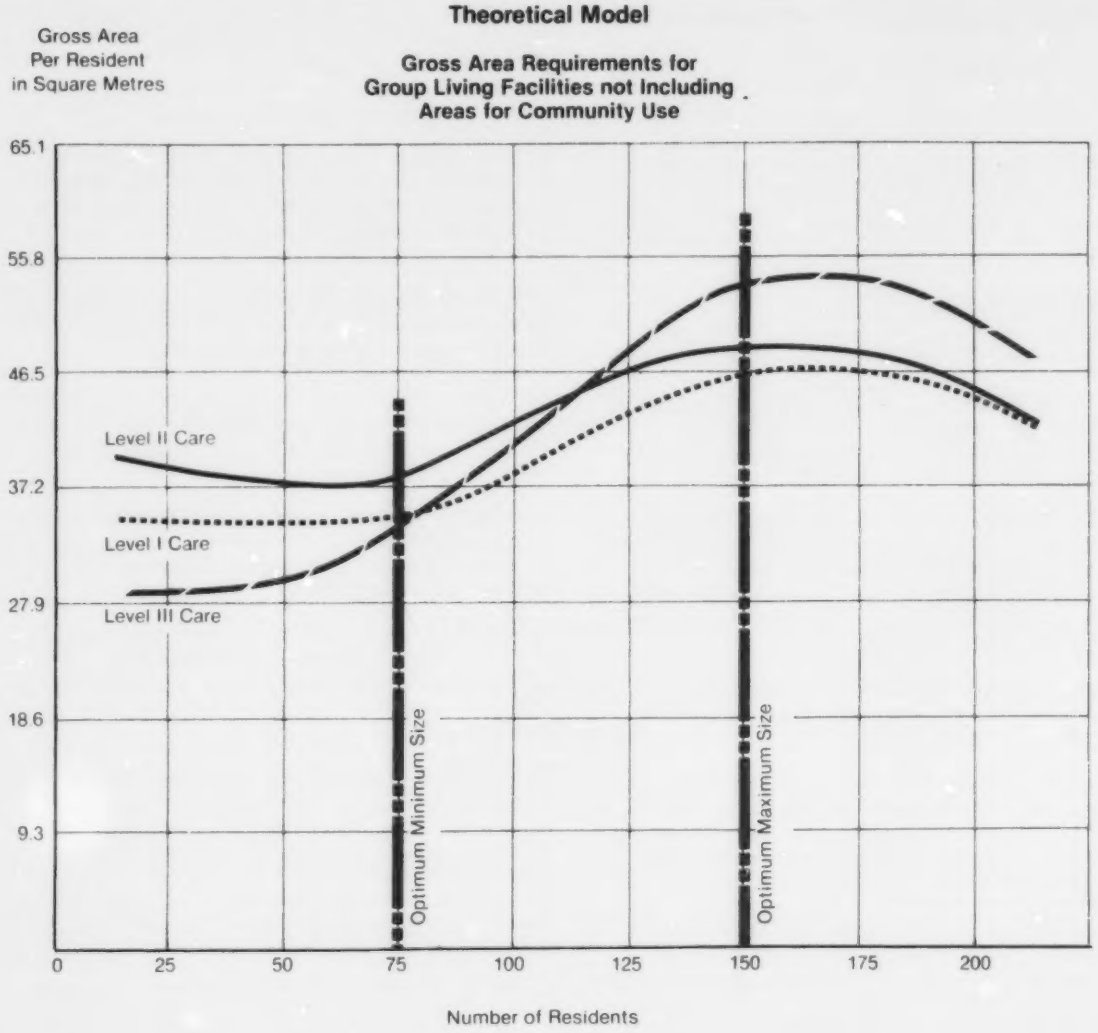
To arrive at an accurate grossing factor, all internal circulation spaces, partitions, exterior walls, service ducts, shafts, boiler room, penthouse, etc., should be calculated using an approved standard method of measurement.[2] The sum of these in turn can be related to the overall gross area and usable net area for the purposes of determining the grossing factor expressed as a percentage.

[1] See Part II, The Shelter Component, page 12.

[2] A standard method of measurement which may be used as a guide, is *Floor Area Measurement for Health Facilities*, published by Health and Welfare Canada, 1977.

Theoretical Model

Gross Area Requirements for Group Living Facilities not Including Areas for Community Use



Some basic assumptions are made above:

a) Facilities contain a high proportion of single rooms.

b) Programs and services are at an optimum level.

c) Individual self-contained apartments are not included.

N.B. This model was derived from general statistics on existing facilities funded by CMHC.

Detailed Siting Criteria

Suggested Distances from Community Resources

Given adequate walkway systems, negotiable topography and protection from traffic hazards, the following walking distances are suggested:

Resource	Distance (approx.)	Distance (in Metres)
Grocery Store	2-3 blocks	250-365
Bus Stop	1-2 blocks	120-250
Church		400-800
Drugstore	3 blocks	365
Clinic or Hospital		400-800
Bank	3 blocks	400
Community Centre	3 blocks	365
Library		1600

Walkways and Paths

See National Building Code 1977, Supplement No. 5.

N.B. It is suggested that primary paths to main entrance and from main parking area be 1.67 m wide to allow two wheelchair users to pass easily.

Walkways should be of non-slip finish. Where jointed paving materials are used, joints shall not exceed 15 mm.

Textured aggregate should not exceed 10 mm overall size, if used in walkways.

Junction with roadways, drop-off zones, crosswalks, etc., should be made using ramped curbs with maximum lip of 15 mm between adjacent surfaces.

Maximum slope of inclined walks should be 1:20.

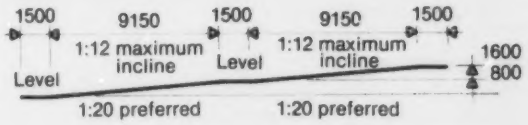
Walkways more than 35 m long should be provided with sitting areas to one side of walkway, complete with bench, back support and arm rests, with 500 mm clear space between bench and walkway.

Ramps and Stairs

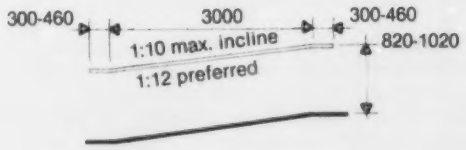
Where steps are required to accommodate a change in level, there should be no fewer than three risers. The total rise in one flight shall not exceed 2.5 m. Steps shall have suitable handrails on either side and be no wider than 1 m. Edges of treads shall be clearly identified, and riser and tread shall be designed with the ambulant disabled in mind. Open risers or projecting treads are not advised.

At rapid changes in level which require steps, ramps should be provided in addition to steps, or substituted for steps. Such ramps should have a maximum slope of 1:12 and a maximum run of 9 m. If longer ramps are required, intermediate landings of 1.5 m are required. Ramps should be wide enough to accommodate a wheelchair but not so wide that handrails on either side cannot be used as an assist.

The ramp width should be 1 m, with handrails on either side.



Long Ramps



Short Ramps

Where volume of wheelchair traffic is expected to be high and ramps are the preferred solution, wider ramps (1.7 m) may be used. However, it is suggested that these not exceed 5 m in length.

The intersection between materials and planes at both ends of the ramps should be eased to permit a smooth transition.

Handrails should be located on either side of all ramps and should be designed to be easily grasped by those with poor hand control.

Guardrails or curbs are required to prevent wheelchairs from rolling over the edges of ramps.

Lighting should be provided over major access paths, ramps and steps to ensure safe travel at night. Illumination should highlight changes in level and direction. Lighting sources should be located so that they do not obstruct the path of travel.

Ramps and steps should be protected from snow and ice accumulation.

Parking Areas

A sufficient number of parking spaces should be provided close to the major point of entry for vehicles used by handicapped residents.

Parking spaces for handicapped users should be 3.6 m wide. (See Part III, Architectural Considerations, Service and Delivery, pages 46-47.)

The pedestrian route to these parking spaces should be protected from other vehicle traffic.

Where block heaters are provided these should not intrude into path of travel.

Changes of level between parking areas and walkways should be minimized, or ramped curb access points provided.

Designated parking spaces for handicapped users should be identified with appropriate signs and such spaces should be well-lit.

Driveways

Special buses and vans are frequently used by residents of group living facilities. Therefore, driveways to main entry and unloading areas should be wide enough to accommodate two passing vehicles.

Unloading passenger zone should be large enough to accommodate two vehicles unloading at one time.

A continuous ramped curb, or level access in passenger unloading areas, is desirable to accommodate all types of public and private vehicles which may have different boarding points.

Unloading areas should be protected from wind and rain, whenever possible, and should be clearly marked.

Distance of travel from passenger unloading area to main entry should be as short as possible.

Some seating for waiting passengers may be desirable adjacent to boarding area.

In general, driveways should be designed with easy gradients and be clearly defined from pedestrian routes, preferably through changes of elevation or surface texture. Painted lines can be used but their use should be limited.

Location and design of lighting poles, signs, manhole covers, catch basins, etc., should be considered to ensure that they do not present hazards to either vehicle or pedestrian traffic, particularly to handicapped users.

Site grading, including rough grading and landscaping, should be considered in relationship to disposal of surface rain water and spring run-off. Banked areas may require retaining walls or other landscaping devices to ensure that walkways and driveways are adequately protected.

Snow clearing modes should be considered in the initial and final design stages, and enough space left for snow dumping and the free movement of snow clearing vehicles.

Curbs, bumper strips, perimeter seating, signs and lighting standards should all be located free of snow clearing and dumping activities.

Receiving areas for goods, etc., should be designed to ensure rapid surface drainage and protection from the weather.

Site Landscape

Exterior landscaped areas which provide not only a pleasing setting but usable outdoor recreation space as well, must be considered.

Planted areas including annuals, perennials and shrubs should provide diversity and interest throughout all seasons and should be created to satisfy both indoor and outdoor viewing.

High planting boxes and raised planting areas, accessible to wheelchair users and elderly residents with mobility problems, should be incorporated into the design solution.

Trees should be selected to provide variety through the seasons. Special attention should be given to outdoor seating areas where trees provide summer shade.

Outdoor recreation areas should include provision for group and individual recreational activities, for groups of different sizes. Popular group activities include shuffleboard, checkers, horseshoes, cards, chess, barbecues, picnics and entertainment.

Outdoor patios, gardens and roof decks directly connected with lounges, dining rooms and high activity areas all offer the opportunity for functions to be carried on indoors and outdoors.

Outdoor sitting areas should generally be located to take advantage of dynamic activity, with some opportunities for quiet conversation, offering both sunshine and shade and protection from the wind. Individual patios may require screening or planting to ensure privacy, and should provide enough space for small conversational groupings.

Special features, both natural and designed, can provide interest. Water can be used in pools, fountains, streams or waterfalls to offer delightful visual and aural effects. Pools may be planted, or filled with fish or may act as reflectors. Other features such as aviaries and herb gardens are also a source of interest and activity.

Areas which can be set aside for residents' own gardening are both useful and desirable.

Fixtures and Fittings

Alarm Systems

Alarm systems should be both audible and visible, e.g. fire alarms, entrance door bells, emergency call systems.

Basins

Should be appropriate for use by residents or visitors in wheelchairs (see Anthropometrics, Appendix A, page 76.)

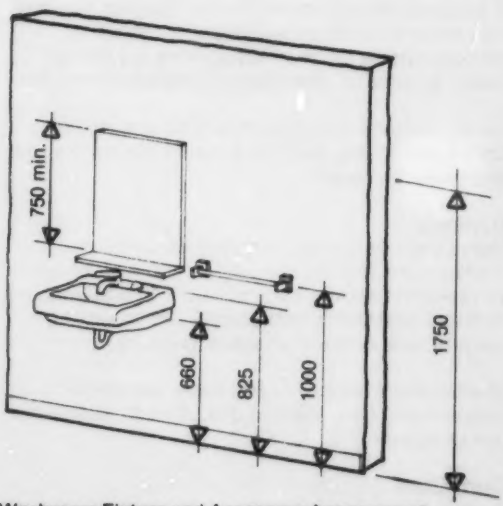
Bathtubs

Domestic bathtubs should be raised with rim at same height as wheelchair seat for transfer.

Institutional baths should be mounted to permit easy access by resident and also allow assisted bathing by staff. Bathtubs should have non-slip bottoms and built-in transfer seats where possible.

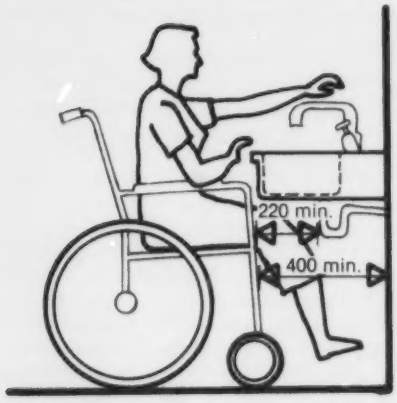
Bathroom Accessories

Accessories should be selected for use by handicapped persons and mounted at an appropriate height.



Washroom Fixture and Accessory Arrangement

Counters and Vanities
Should be mounted at a height appropriate to handicapped users.



Wheelchair and Vanity

Communication Systems
Intercom and telephone systems should be appropriate for the users. Those systems used by staff only do not require special modification. If disabled residents are to use intercom systems they must be both accessible and usable by persons with a range of disabilities including frailty, blindness, deafness and reduced mobility.

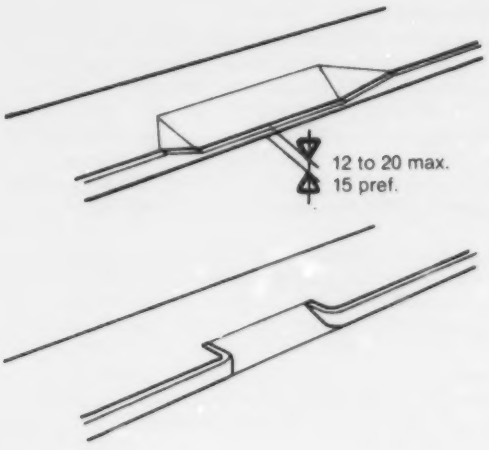
Public address systems should be adaptable to both specific and general areas of the facility and to expansion needs.

Controls
These include duplex receptacles, switches, thermostats, etc. All controls which may be used by residents should be accessible to and usable by them regardless of disability (for mounting heights, see Anthropometrics, page 76.)

Thermostatic control of hot water supply in resident and care areas is desirable to reduce the risk of scalding.

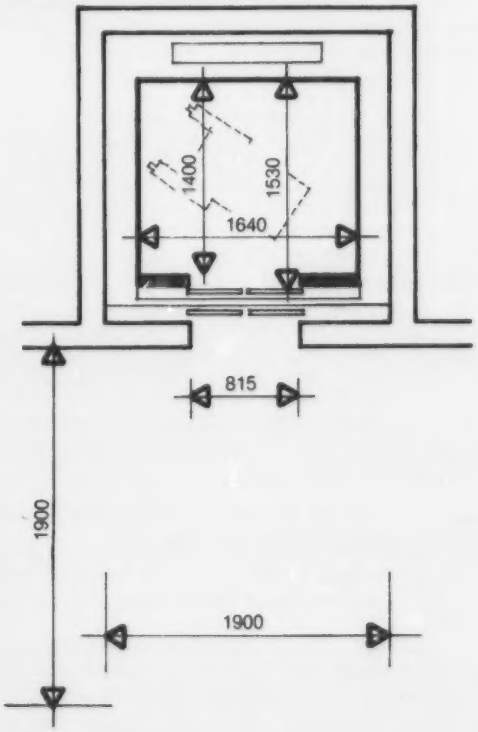
Curb Cuts
Curb cuts are required wherever resident pedestrian traffic might occur (See also Part III, Siting Criteria, Accessibility, page 51.)

Doors
Doors and doorways should allow the free passage of persons with disabilities including the frail and those in wheelchairs. (See also, Fixtures and Fitting, Hardware, page 69.)



Ramp at Curb

Elevators
Elevator cabs should accommodate both wheelchair and standing residents and staff. One elevator should allow for the free movement of a stretcher with attendant. (See also, Performance Specifications, Elevators, page 30.)



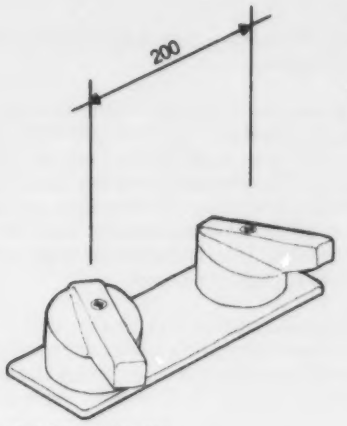
12-Person General Purpose Elevator

Emergency Systems

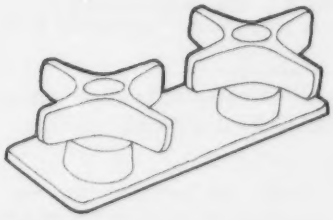
Emergency systems include fire alarms and nurse call. These should have both audible and visible signals. Nurse call systems should be located in residents' rooms and washrooms and be usable by those with a variety of handicaps. All such call systems should be mounted at a height accessible to those in wheelchairs. In Level III care, call systems should be located close to the head of the bed.

Faucets

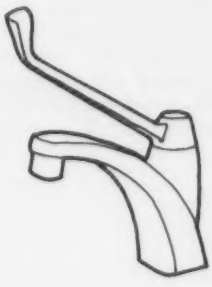
Faucets in residents' washrooms, kitchens and activity areas, as well as in communal spaces and visitors' areas, should be of the lever or blade type, mounted wide apart to allow for easy handling by those with disabilities. A single-action faucet is preferred where its use is appropriate.



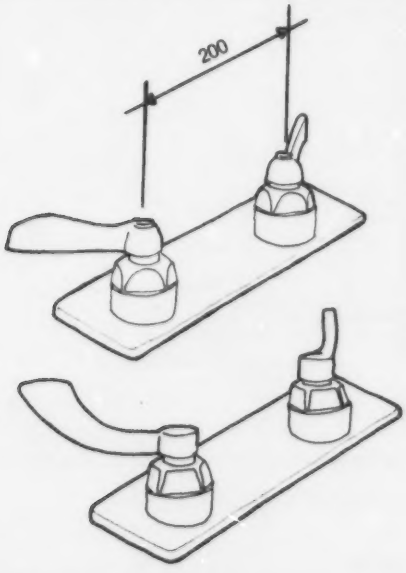
Faucets with Lever Handle



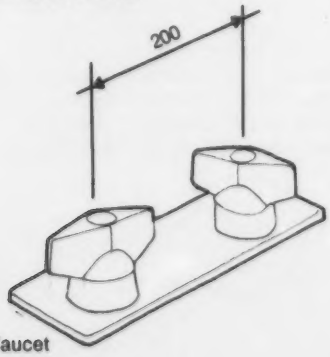
Alternate Faucet



Single-Lever Action



Faucets with Blade Handle



Alternate Faucet

Finishes
These include floor finishes, wall finishes, ceilings and exterior paving.

Floor finishes should be non-slip under wet or dry conditions, resilient and easily maintained. Floor surfaces in all areas used by residents should be appropriate for wheelchair traffic, cart traffic and residents using mobility aids such as walkers, canes or crutches. Floor surfaces should be non-reflective and easily distinguishable from adjacent wall surfaces by colour or tone.

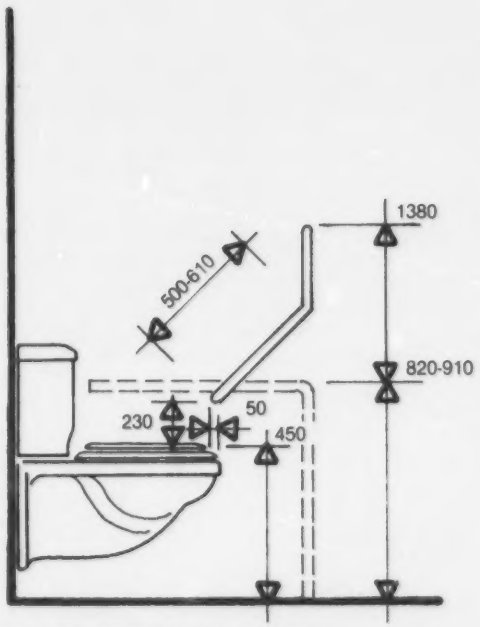
A variety of wall finishes is desirable in residential areas to provide visual stimulus and an aid to orientation. Wall surfaces should be easy to maintain.

Ceilings should generally have an acoustic quality and non-glare finish. In circulation and high activity areas, ceilings may require access points to services. Such access and ceiling mounted accessories, e.g., speakers, lighting, exit signs, thermostats, etc., should be carefully designed to avoid visual confusion.

Paving should be selected to have minimum level changes and jointing systems.

Furniture
Furniture should be selected for use by the elderly. Care should be taken in the selection of chairs and tables, lounge furniture, garden furniture, etc., to ensure that the seating provides for good posture, with sufficient lumbar support and lateral support where required. Tables should allow for clearance of wheelchair-bound persons, and arms of dining chairs, etc. Beds should be selected without casters, should be appropriate for the level of care and should preferably be domestic in character.

Grab Bars
Grab bars should be located adjacent to residents' bathtubs, toilets and showers as both transfer aids and for security. Grab bars should be mounted at an appropriate height, be a minimum of 30 mm in diameter and be located no further than 40 mm from the adjacent wall surface. Grab bars must be securely mounted and capable of supporting a resident's weight in an emergency. A variety of grab-bar arrangements may be appropriate.



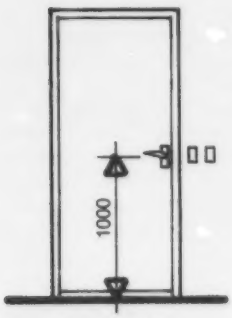
Alternate Grab Bars Adjacent to Toilet

Handrails
Handrails are desirable as a mobility aid in all residents' circulation areas, e.g., corridors, elevators and stairs. They should be mounted at an appropriate height and be of an easily-grasped profile. The ends of handrails should be defined to allow the blind to determine when they are reaching the end of a section. (See also, Performance Specifications, Corridors, page 28.)

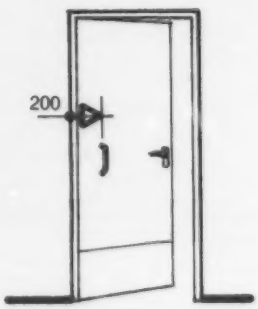
Hardware

Door and cabinet hardware in all areas used by residents and visitors should be usable by those with a variety of handicaps. Persons with limited flexibility or strength find lever handles easier to operate. Closers on exterior or interior doors, including exiting doors, should be slow closing to allow the passage of a wheelchair.

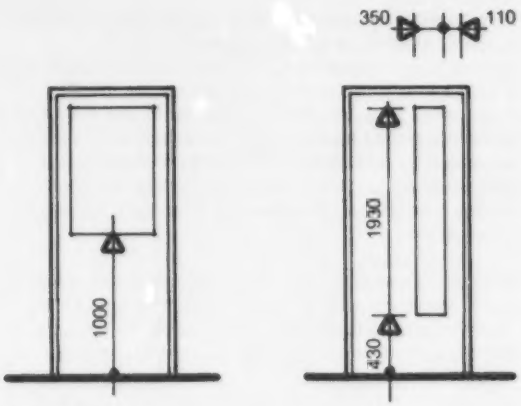
Recommended pressure required to open doors should not be greater than 55 kPa.



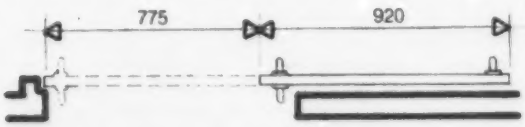
Door Handle Height



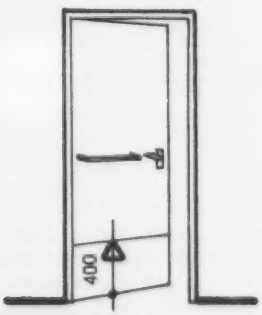
Auxiliary Pull Handle and Kick Plate



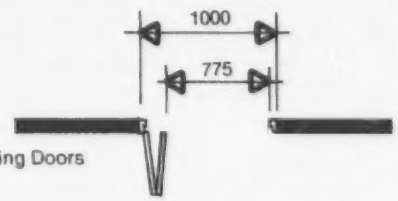
Glazed Doors



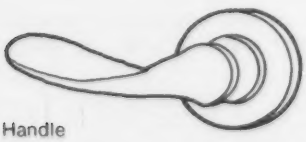
Straight Sliding Door - Door Handles Each Side



Pull Rail and Kick Plate



Bifolding Doors



Lever Door Handle

Information

Information systems include clocks and bulletin boards, as well as general communication systems and signs which are dealt with elsewhere. Clocks in residents' and visitors' areas should have large faces with clear numerals and hands on a high-contrast background, mounted at a height viewable by residents from either a standing or seated position. Consideration should be given to the location of clocks in all primary residents' activity areas.

Bulletin boards should be located in areas close to main circulation routes and areas of high activity. Such boards should be easily usable by residents and mounted at an appropriate height. Boards should be large enough to accommodate a variety of notices, posters, etc. Where special lettering is used on semi-permanent boards, it should be legible from a reasonable distance, by virtue of scale and contrast with background.

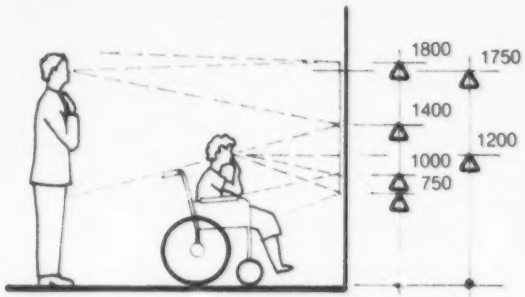
Mail Boxes

Residents' personal mail boxes should be mounted at a height accessible to both wheelchair users and ambulant persons. Locks and opening mechanisms should be easy to operate. The level of area lighting around mail boxes should be high. Where individual mail boxes are not provided, residents should have easy access to a central clearing point for mail, messages and other information.

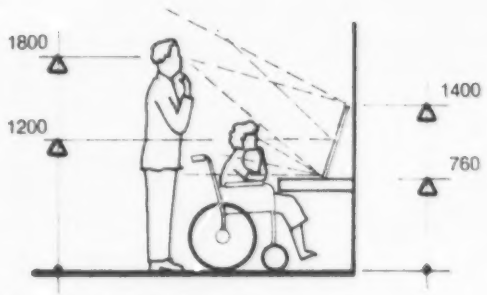
A mailbox or slot for outgoing mail should be accessible to and usable by all residents. It should be in a central location and be adequately identified by appropriate signs.

Mirrors

Mirrors in private, semi-private and public washrooms used by elderly residents and visitors should be mounted to allow viewing by both ambulant and wheelchair-bound residents. Lighting at mirror locations should be sufficient for grooming purposes. Where a number of mirrors are provided, at least one should be usable by a person in a wheelchair.



Mirrors



Inclined Mirror to Vanity

Parking

Parking spaces for residents should meet prevailing standards. A number of spaces should be wide enough to accommodate vehicles carrying handicapped riders who need to transfer to wheelchairs. Pedestrian access routes from such parking should be free of obstructions and clear of vehicular traffic and provide level access to main entrance areas.

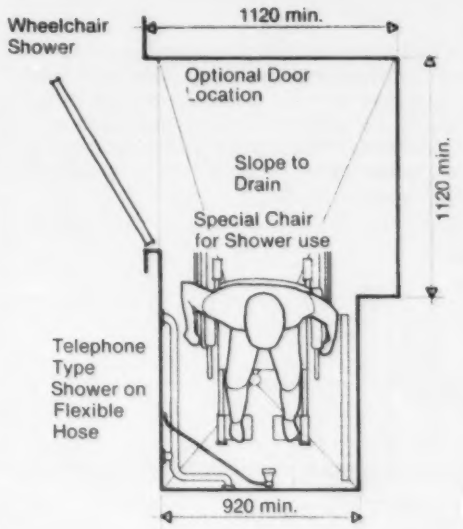
Ranges
Ranges in areas used by residents should have simple range tops, easy to clean. Controls should be located where handicapped residents can reach them easily without risking burns. Space should be provided on either side of ranges for placing pots, etc. The oven should be usable by a person in a wheelchair.

Ramps
Exterior and interior ramps serving elderly pedestrians should be usable by all handicapped and ambulant elderly (see *Supplement No. 5 to the National Building Code of Canada*). Ramps should have appropriate handrails and guard rails where required as aids to safe navigation. Surfaces of exterior ramps should be non-slip under all weather conditions. Interior ramps should have floor finishes which are non-slip, yet allow the free movement of wheeled traffic. (See also, Part IV, Detailed Design, Ramps and Stairs, page 63.) Supplementary stairs adjacent to short ramps are preferred by many ambulant elderly.

Refrigerators
Refrigerators in kitchens used by elderly residents should be of an appropriate size, easy to open and self-defrosting. Refrigerators should be located so that door can be easily opened by a handicapped resident in a wheelchair and there should be adjacent counter space for loading and unloading.

Showers
Shower heads over bathtubs or in special wheelchair showers should be of the adjustable telephone head type. Water temperature should be controllable to prevent accidental scalding. Wheelchair shower stalls should have sufficient room for the wheelchair user and attendant. Access should be direct and level, and sufficient floor drainage should be provided to ensure easy run-off of water. All surfaces should be easily maintainable.

Grab bars should be located to allow a standing or seated person adequate security. A demountable seat of non-slip material may be desirable for residents in Level I care. Such a seat should not inhibit wheelchair access. Space should be provided adjacent or near for personal clothing, towels, etc., and for changing.



N.B. There are many alternatives to this solution.

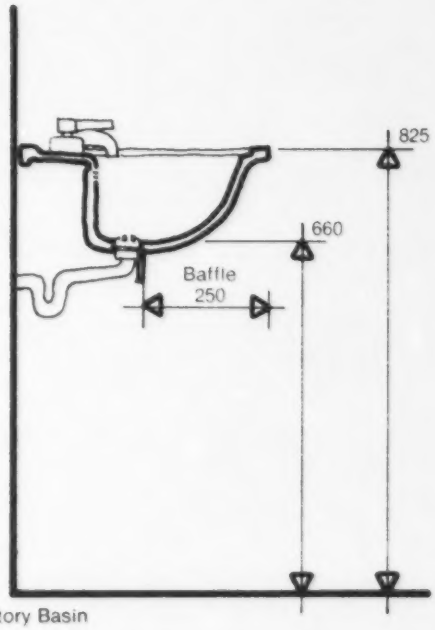
Signs
Signs should be designed or selected to ensure that the entire system of written information, colour coding, graphics or other symbols is unambiguous and is comprehensible to all handicapped users.

Special consideration may be required for blind or perceptually handicapped residents. Braille signs may be desirable in a few key locations used by visitors, but it is not generally considered essential. Raised or incised simple lettering on high-contrast backgrounds is preferred.

Signs should be mounted where readily visible or touchable by residents, especially in residents' wings where individual rooms require identification. Signs should be adaptable to expansion or modification as required over time.

Sinks

Sinks should be mounted at a height usable by ambulant or wheelchair residents. (See also, Part IV, Fixtures and Fittings, Counters and Vanities, page 66.) Where sinks are located in a vanity or counter, sufficient knee space should be provided for a wheelchair user. Controls should be accessible to all types of users.



Lavatory Basin

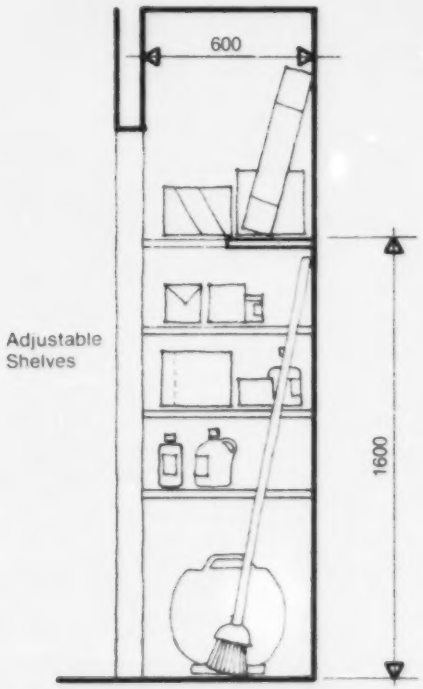
Kitchen sinks should have counter space on either side large enough to accommodate a dish rack or tray.

Staircases

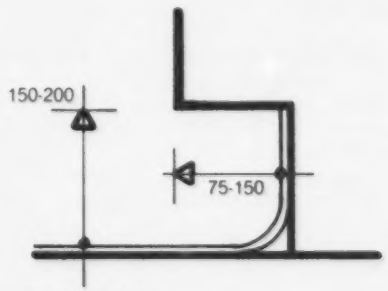
Staircases should satisfy prevailing codes and standards. They should be usable by the majority of handicapped users and detailed accordingly (see page 29.) Finishes on treads and nosings should be non-slip. Treads should contrast with adjacent surfaces and nosings should be clearly identified by colour and texture. Handrails should be appropriate. (See also, Part III, Performance Specifications, page 28, and Part IV, Fixtures and Fittings, Wheelchairs, page 75.)

Storage

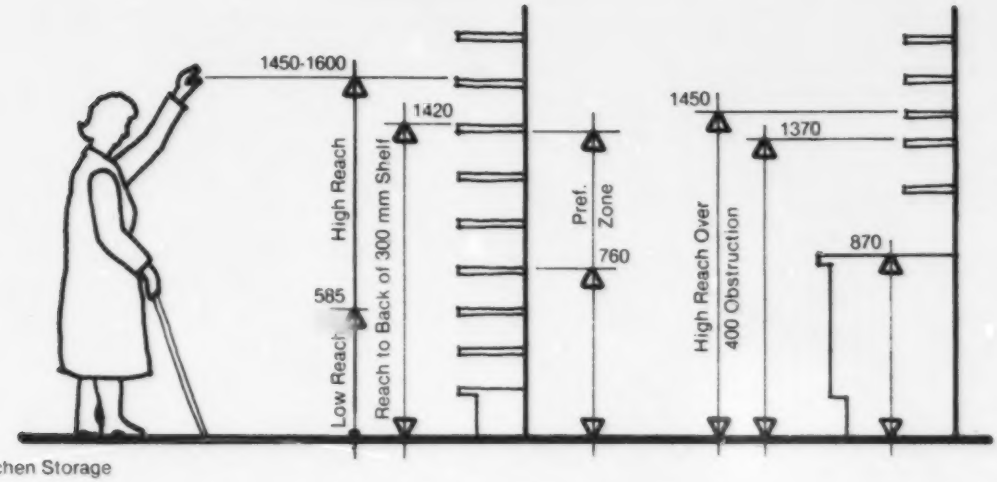
Storage areas for residents' belongings, clothing, housekeeping supplies, food, etc. should be appropriately designed to complement the abilities of all handicapped users. All shelving, rods, etc., should be adjustable in height. Storage cupboards should have doors that are easily opened by a person in a wheelchair or with limited manual dexterity or strength. Storage should be accessible (See Anthropometrics, Appendix A, page 76.)



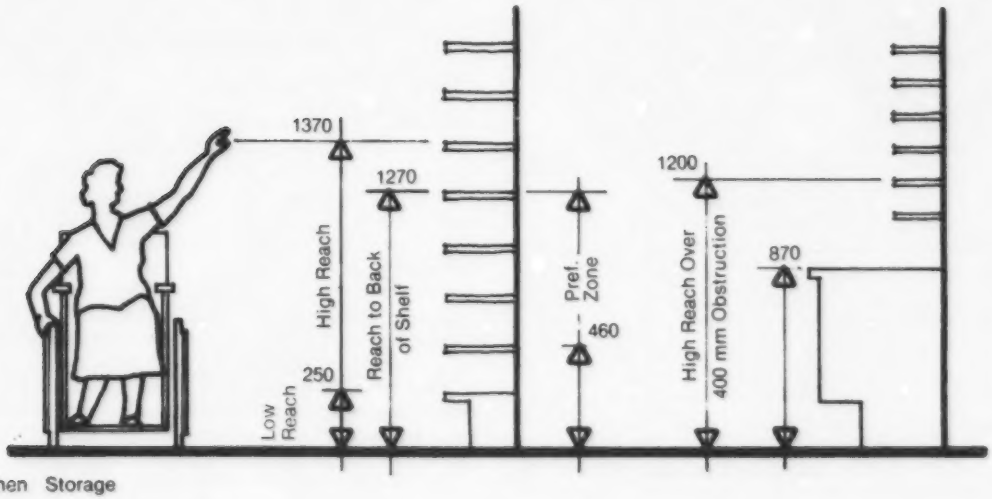
General Storage



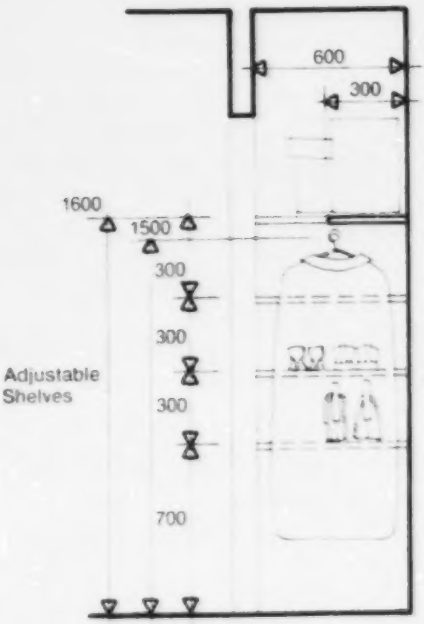
Recessed Cabinet Base

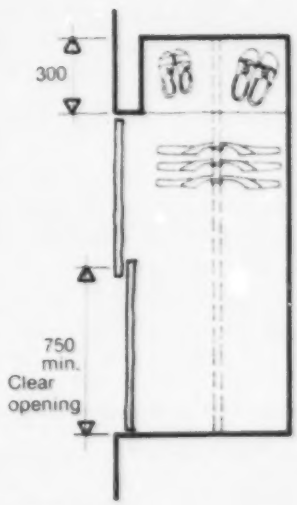


Kitchen Storage



Kitchen Storage

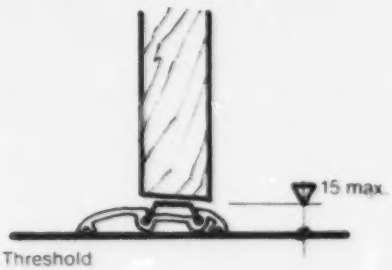




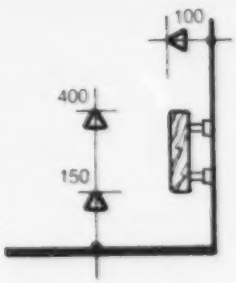
Personal Storage

Thresholds

Thresholds should provide minimum obstruction to the free passage of a person in a wheelchair or one with walking difficulties.



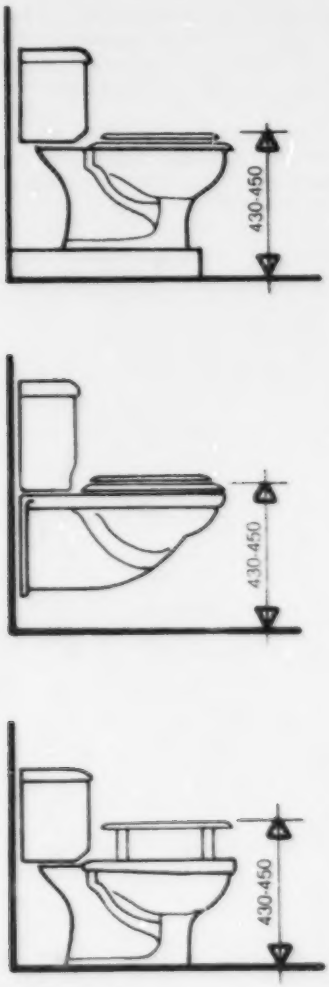
Flexible Threshold



Buffer Rail

Toilets

Toilets should be mounted at a height where the seat is level with the seat of a wheelchair, in all areas used by elderly residents or visitors. Such toilets should have enough space at the side and in front to allow either a lateral or frontal transfer from a wheelchair. Grab rails should be provided on an adjacent wall within easy reach of a person seated on the toilet. Toilet paper dispensers and emergency call system should be also reachable from this position. Toilet seat should be open fronted and of a material that is easily cleaned. Flushing mechanism should be of the lever type.



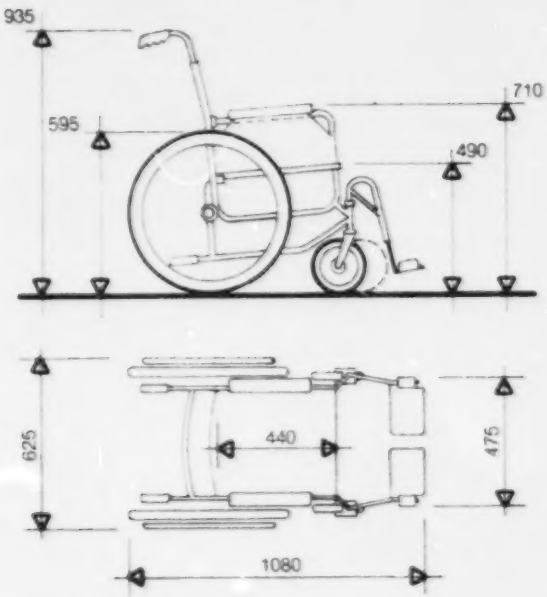
Toilet Arrangements

Turning Space

Turning space for a wheelchair should be allowed in all rooms and areas used by handicapped residents or visitors. Particular attention should be given to washrooms, bathrooms, kitchens, laundries, entrance ways and vestibules, as well as bedrooms and living spaces. Exterior walkways, recreation areas, balconies, etc., should also be considered where use by persons in wheelchairs is anticipated.

Wheelchairs

A wide variety of wheelchairs are made for various types of disability. Attention should be given to overall dimensions and clearances required for the free passage of wheelchairs and their users. Turning radius and passing clearances are given in other sections of this guideline.



Standard Wheelchair

Elderly residents may use manually-propelled wheelchairs or electrically-powered wheelchairs, or they may be moved by staff from one location to another. Wherever wheelchair use can be anticipated in a facility, e.g., elevators, corridors, etc., enough space should be allowed for an attendant accompanying a wheelchair. For detailed wheelchair dimension, see Anthropometrics, Appendix A, page 84.)

Windows

Windows in residents' bedrooms and living areas should be designed so that viewing is unrestricted by sills, or horizontal transoms at inappropriate heights (See Anthropometrics, Appendix A, page 76.)

Operating mechanisms and vents should be located where handicapped residents can reach them and should be easy to operate by persons with limited manual dexterity and strength.

Appendices

Appendix A Anthropometrics

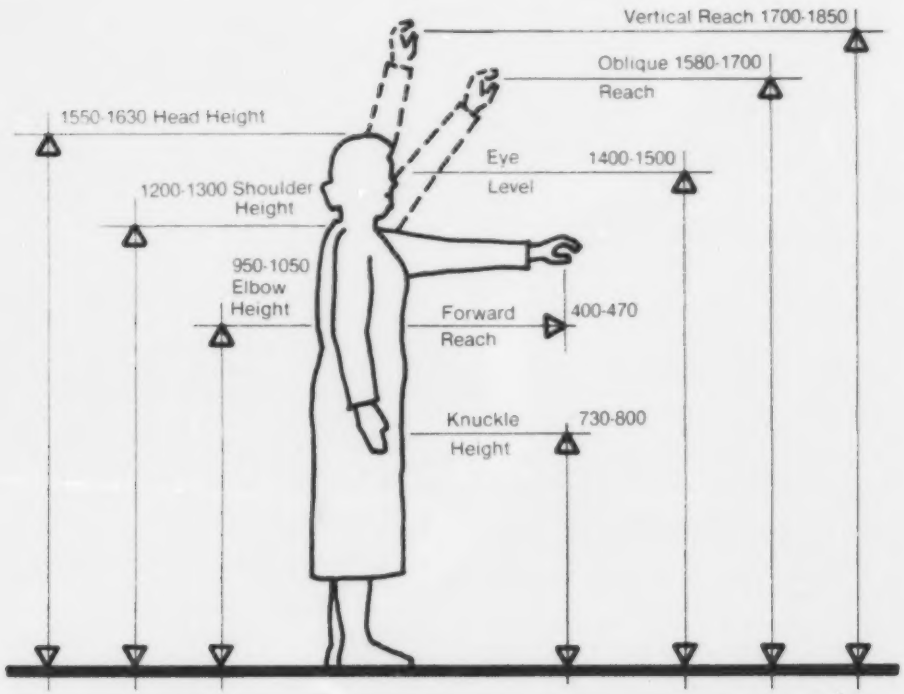
Anthropometrics is the study of human physical measurement relating to the proportions of the human body, both in the able-bodied and the disabled.

Design criteria for buildings depend on the average, and in some cases the specific, physical characteristics of the intended users. Facilities for the elderly must reflect their physical dimensions, as well as their capabilities, mobility and adaptability. The use of mobility aids such as wheelchairs, walking aids and artificial limbs must also be considered in planning space and selecting and placing furnishings and fixtures. Among wheelchair users, there may be a great variation in space requirements according to the agility of the user.

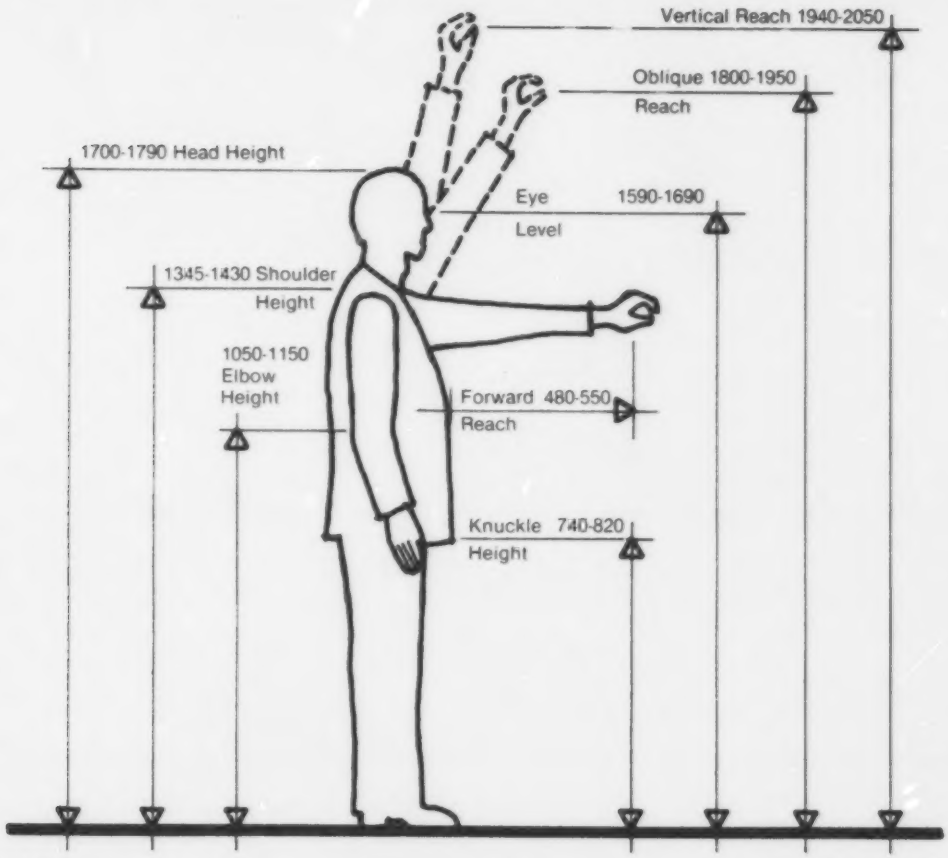
Anthropometrics for elderly people differ from those of the general adult population due to the physical changes characteristic of aging, plus a greater incidence of disabling conditions.

Height is frequently the controlling measure in applying anthropometrics in design, though other variables such as length of reach and line of sight must also be considered.

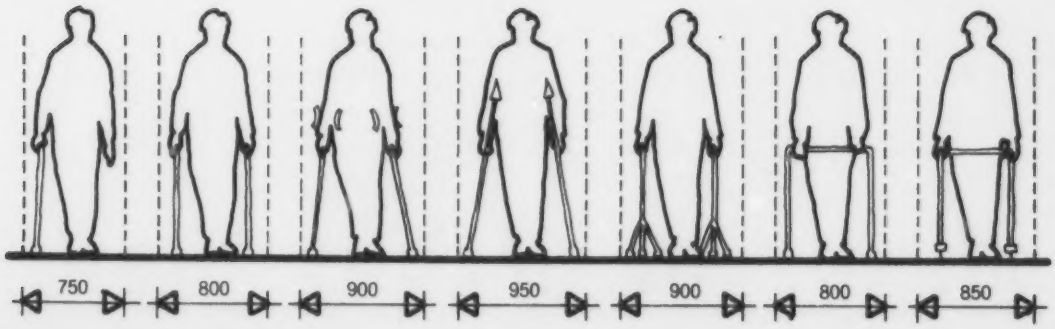
The following dimensions, based on heights measured from the floor, are specific to elderly persons.



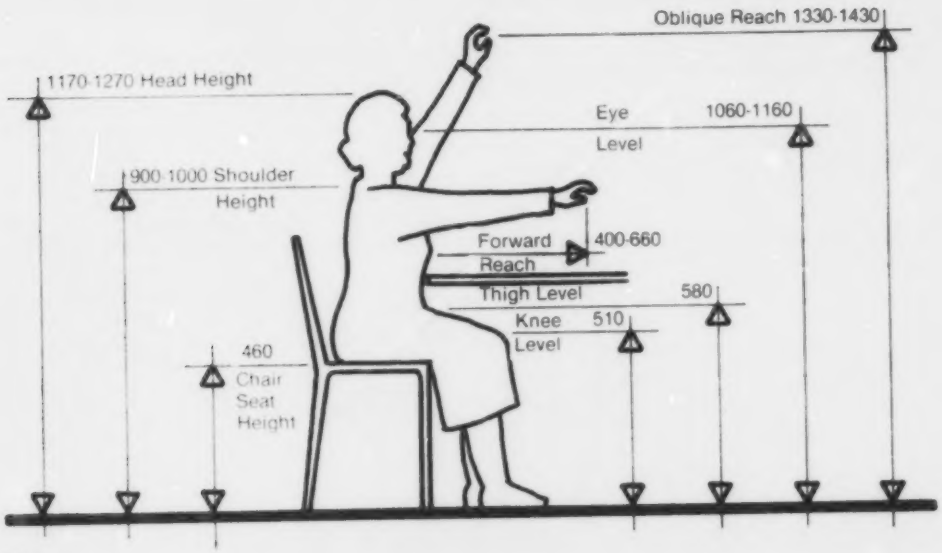
Ambulant Woman



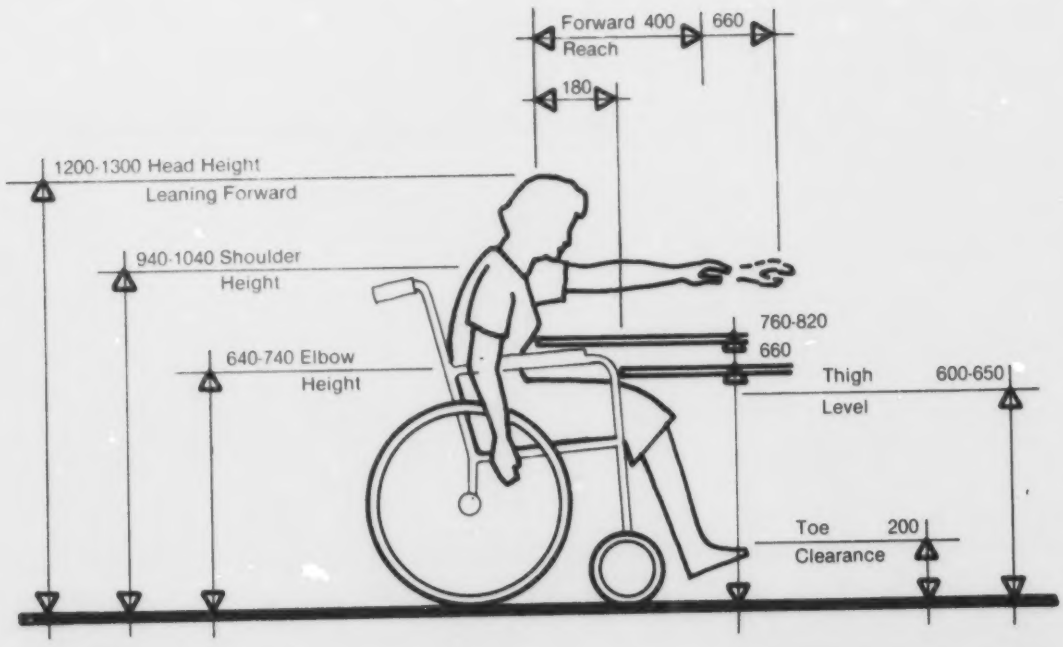
Ambulant Man



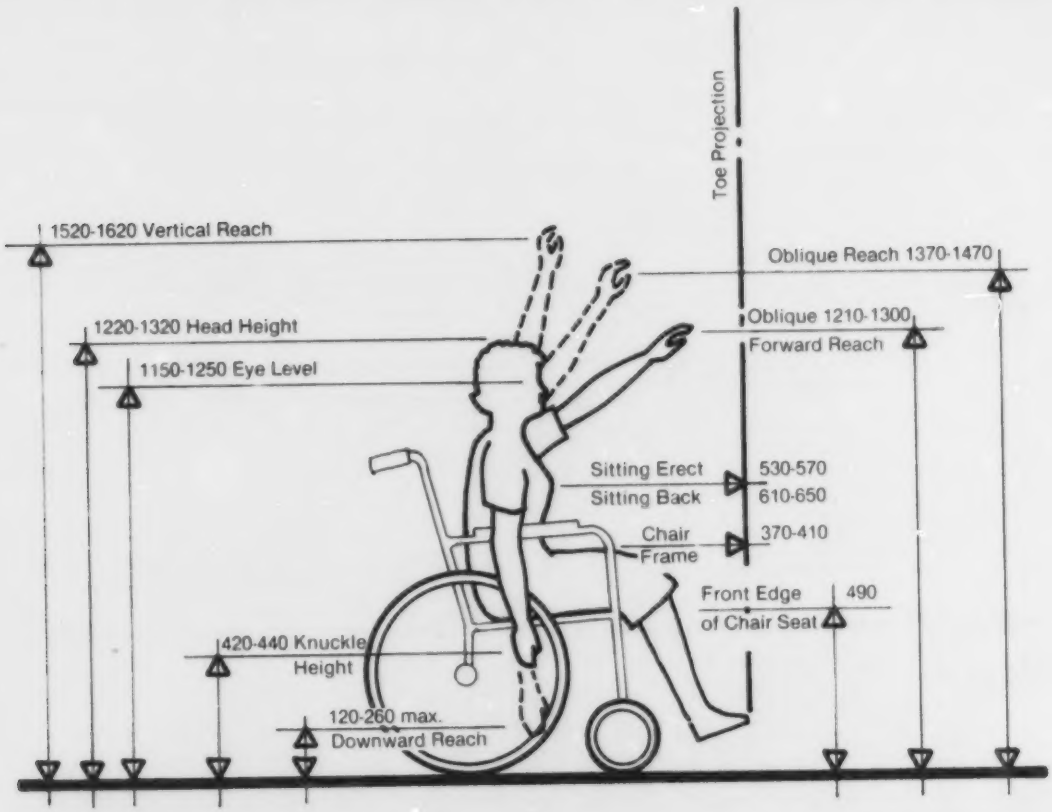
Space Used by Ambulant Disabled



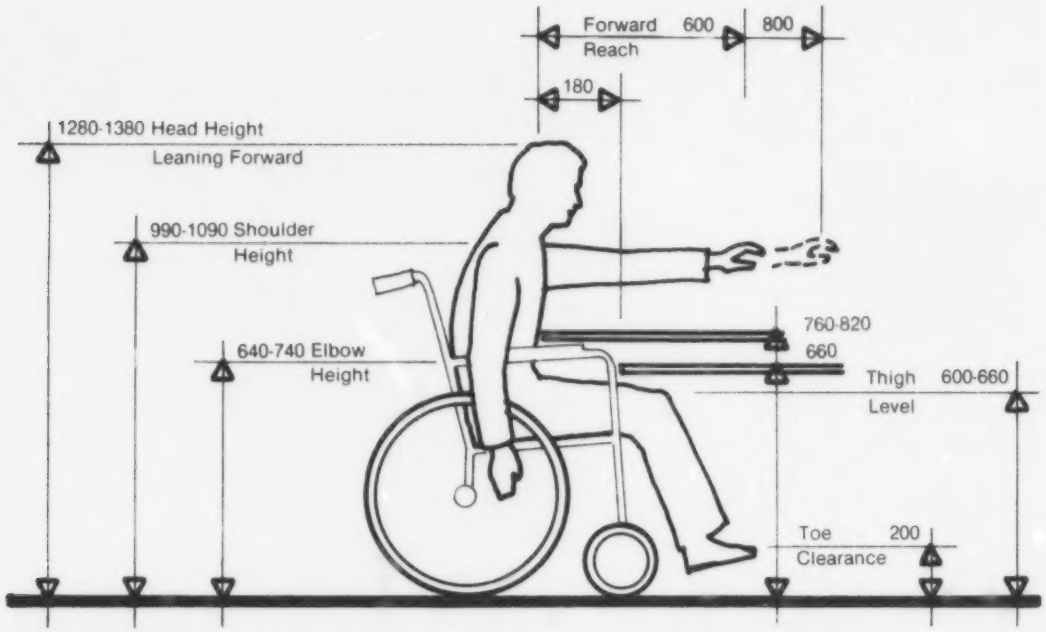
Seated Woman



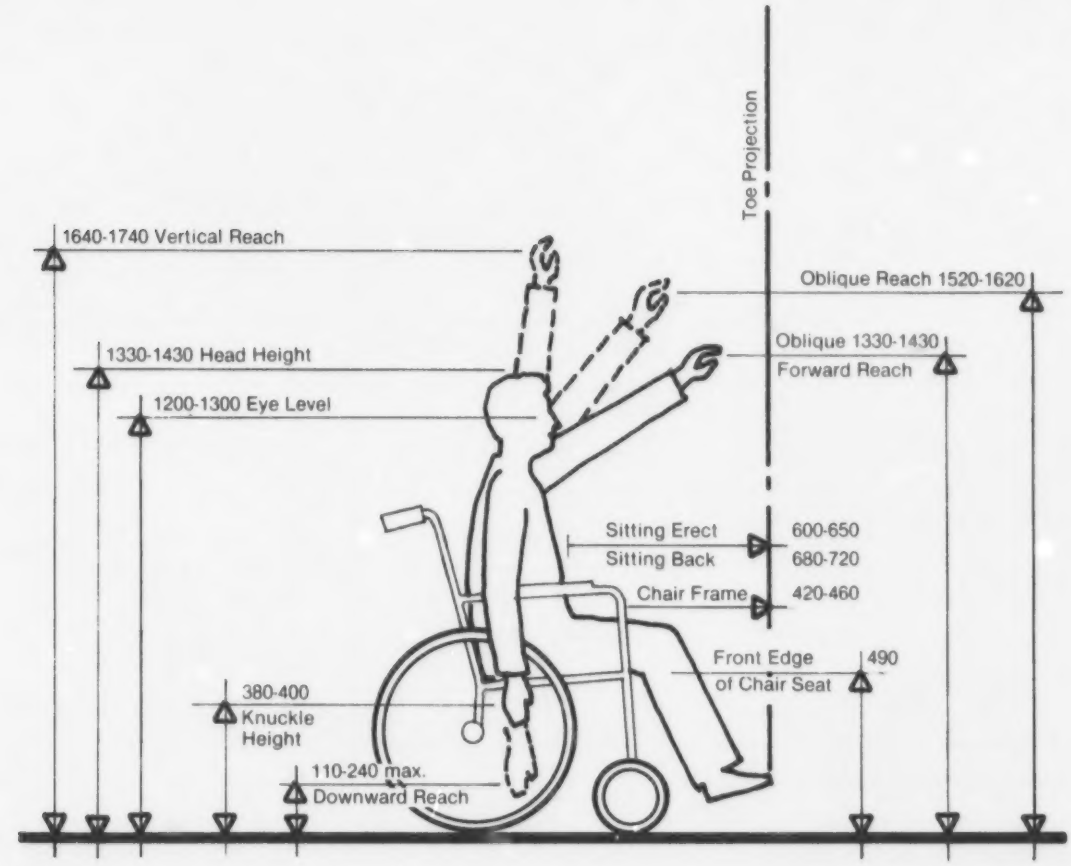
Chairbound Woman



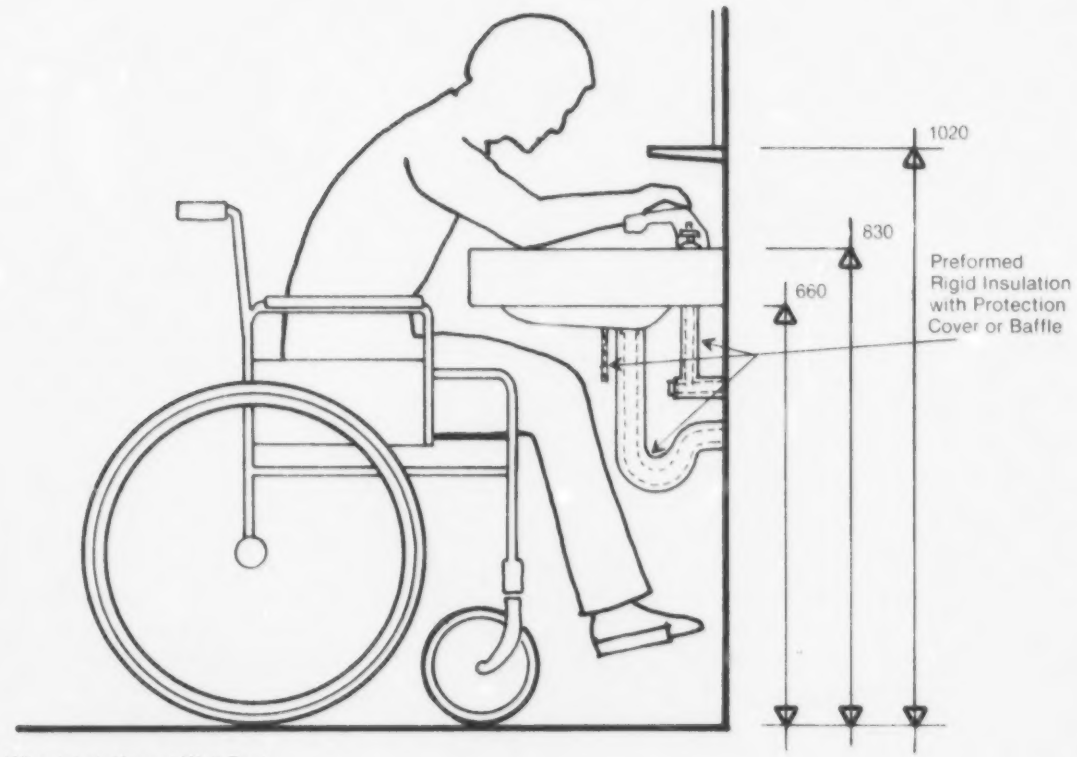
Chairbound Woman



Chairbound Man

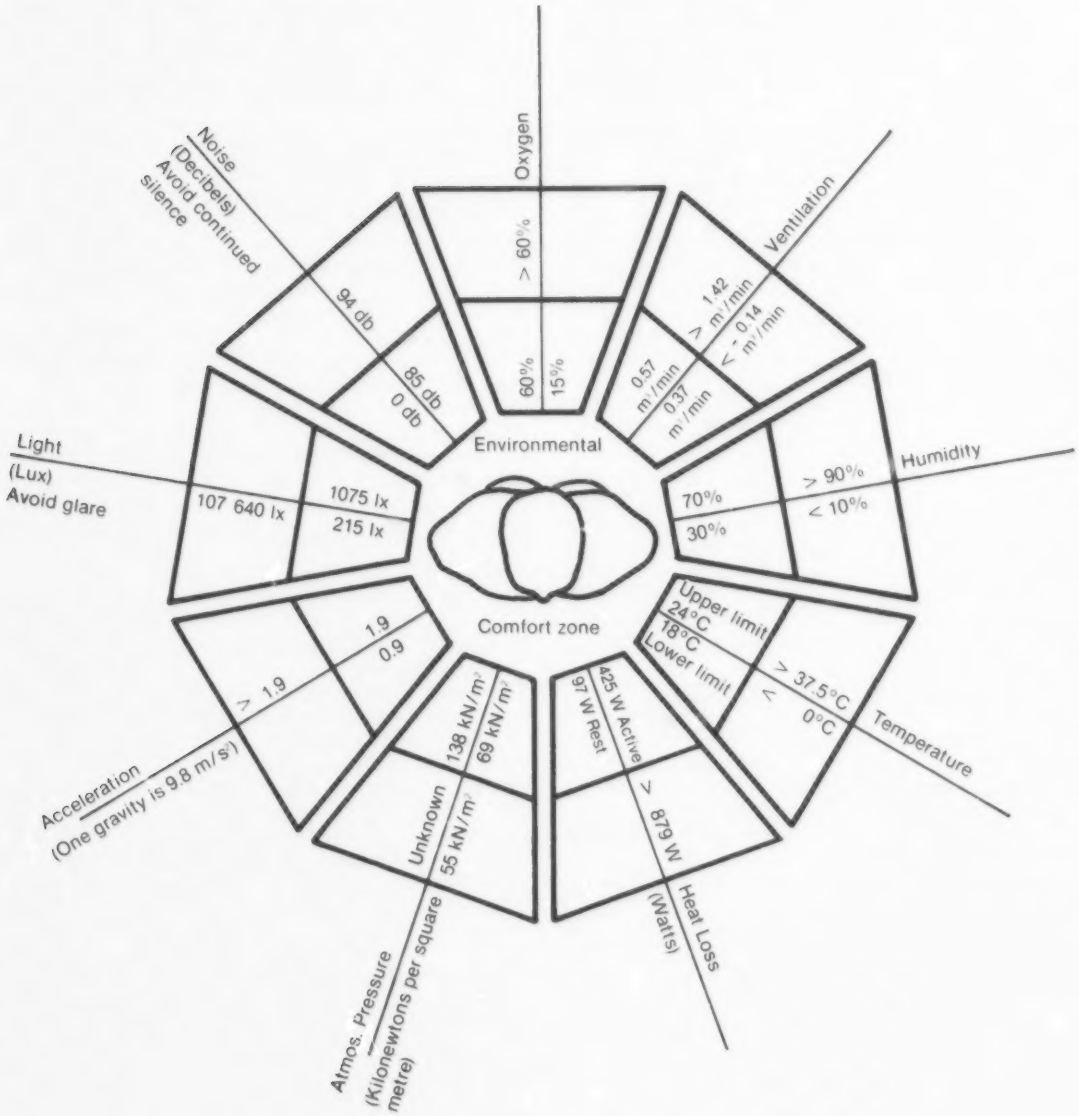


Chairbound Man



Wheelchair User at Wall Basin

N.B. Waste traps should be insulated if they intrude into the kneespace, or the temperature of the water should be reduced to prevent burns.



The two bands indicate the zone from comfort to the tolerance limit.
Credits: adapted from Henry Dreyfuss, ***The Measure of Man***, 1966.

Ambulatory Measurements
(in millimetres unless noted otherwise)

	Male	Female
Head height	1700-1790	1550-1630
Eye level	1590-1690	1400-1500
Shoulder height	1350-1430	1200-1300
Elbow height	1050-1150	950-1050
Knuckle height	740- 820	730- 800
Low reach (without bending)	580- 640	520- 580
Vertical reach	1940-2050	1710-1850
Oblique reach	1800-1950	1580-1710
Forward reach	480- 540	400- 470
Counter height	820- 870	820- 870
Weight	(75 kg)	(63.6 kg)

Wheelchair Measurements

Head height	1330-1430	1220-1320
Head height (leaning forward)	1280-1380	1200-1300
Eye level	1200-1300	1150-1250
Shoulder height	990-1090	940-1040
Elbow height	640- 740	640- 740
Knuckle height	380- 400	420- 440
Downward reach (from floor)	110- 240	120- 260
Vertical reach	1640-1740	1520-1620
Oblique reach	1520-1620	1370-1460
Oblique forward reach	1320-1430	1210-1300
Forward reach	600- 800	400- 660
Side reach (maximum)	660	610
Easy side reach	480	400
Armrest height	710- 740	710- 740
Thigh level	600- 660	600- 650
Front edge of chair seat height	490	490
Toe clearance (wheelchair)	200	200
Toe protection (sitting erect)	590- 650[1]	530- 580[1]
Toe protection (sitting back)	670- 720[1]	610-650[1]
Toe protection (from chair frame)	420- 460	370- 410
Table height	760- 820	760- 820
Counter height (kitchen)	820	820

Seated Measurements

Head height	1260-1360	1170-1270
Eye level	1150-1250	1060-1160
Shoulder height	960-1060	900-1000
Oblique reach	1520-1620	1330-1430
Forward reach	450- 800	400- 660
Thigh level	590	580
Knee level	520	510
Chair seat height	460	460

Living Spaces, Ambulant Residents

High reach to shelf	1600-1800	1450-1600
High reach to back of 300 mm deep shelf	1500-1650	1450-1550
High reach over 400 mm high obstruction	1500	1450
Low shelf, bending knees	250	250
Low reach	580	580
Preferred zone for shelving	760-1420	760-1420
Work surface	760- 870	760- 870
Kitchen aisle (minimum)	1040	1040
Clothes rail	1600	1600

Living Spaces, Wheelchairs

High reach to shelf	1330-1520	1210-1370
High reach to back of 300 mm deep shelf	1330-1400	1210-1270
High reach over 400 mm deep obstruction	1300	1200
Low shelf	250	250
Low reach	330	400
Preferred zone for shelving	460-1270	460-1270
Work surface	760- 820	760- 820
Optimum kitchen counter	790	760
Table height	760	760
Sink length	430	430
Bottom sink height	660	630
Work space (minimum for clearance)	1040	1040
Window sill	730	730
Clothes rail	1400	1400
Mirror bottom	900	900

[1] From chairframe

Appendix B Regional Characteristics

A cross-Canada survey was undertaken to secure information that could not be readily derived through correspondence, from available statistical information or other indirect means. Questionnaires were issued to CMHC regional directors and to the directors of selected facilities funded under the terms of the NHA. Meetings were held in seven cities where the questionnaires were reviewed, and supplementary information was obtained from CMHC personnel and provincial ministries of health, social services and housing. Nursing home administrators were interviewed, facilities were visited and photographed.[1]

The Maritimes

The unique quality characterizing social attitudes in the Maritimes is a deep sense of community. The community, as a whole and at the individual level, is concerned with the welfare of its elderly. People are home and family oriented, and reluctant to move from their own locality. Because of sparse settlement and isolation in many areas, the people are very self-reliant. They value their independence.

Except for large Acadian populations in New Brunswick and Acadian and black groups in Nova Scotia, there are few ethnically differentiated groups and thus no facilities with a specific ethnic character. Facilities tend to be one or two-storey, 40 to 70 residents. They tend to be decentralized to avoid displacing residents from their communities. They are often located in conjunction with a hospital or extended care facility, for economic reasons and because of the availability of services. The greater portion of rooms are double-occupancy, representing 70 per cent of the total, while single bedrooms represent 25 per cent. Washrooms are shared by two to four persons.

Residential care facilities in the Maritimes provide care at Levels I, II and III, but are weighted more heavily towards Levels II and III than the other provinces. With the majority of facilities, residents live there until death, or are transferred to a hospital to die shortly after.

The thrust of the philosophy of care for elderly in the Maritimes is to develop programs and services to allow elderly people to remain in their own homes, or encourage them to live with relatives. At present the number of day-care centres and social service networks is low. This trend will require facilities to provide more of the higher levels of care in future, since the well elderly will be able to live relatively independently with some additional community resources.

Quebec

There is a difference in residential care facilities for the elderly in Montreal and the rest of the province. In Montreal, three dominant cultural groups (French, English and Jewish) have developed separate social service and planning branches, which generate their own facilities. Networks of social and health services for the elderly have not been developed as extensively in rural areas.

Facilities presently being built (*les centres d'accueil*) are intended to provide any or all levels of care from supervisory (Level I) to chronic (Level IV) care. The average size of these facilities is 150 beds although some have been built at 300 to 500 beds. The continuum-of-care concept is preferred to relocation of residents requiring high levels of care.

In rural areas the concept of *familles d'accueil* is still one of the most feasible solutions. These are family-run foster or boarding homes for one to nine elderly residents, who receive non-professional care from the foster family. A per diem allowance is provided for each tenant, although this allowance is not enough to cover special care needs.

The greatest need in Quebec is for facilities with Levels III and IV care services. There are a number of private homes which provide mainly Levels I and II care, but which cannot financially provide higher levels of care. Presently, *les centres d'accueil* are also weighted more heavily to Levels I and II care in spite of philosophic goals.

[1] *"Monograph No. 10: Cross-Canada Survey,"* March 1978 and *"Monograph No. 11: Cross-Canada Survey of Nursing Homes and Hostel Facilities, A Data Analysis,"* May 1978.

Ontario
At present, philosophy and budget are in direct conflict in the provision of housing, services and care for the elderly in the province. Funding mechanisms operating at the federal and provincial levels tend to restrict the development of all but self-contained or hostel units with CMHC financing. Nursing homes providing Levels II and III care are ineligible for CMHC funds. Homes for the aged, with Levels I and II care, have been established through CMHC financing.

The province has a considerable stock of self-contained elderly housing units. In many cases residents in these units are beginning to require some care services which are not easily made available in these settings. Hostel accommodation in many areas of Ontario has proved unsuccessful. The units and meal arrangements are felt to be unsatisfactory and the limited care options too restrictive.

Ontario provides primarily Level I and II care in facilities, and differentiates between personal care and nursing care facilities. It has the highest proportions of activity, occupational therapy and administrative staff of any province, and low percentages of residents who stay in these facilities until death.

The average size of a facility is 65 beds. These are primarily one to two-storey with some high-rise hostel facilities. The resident rooms are divided almost equally between single bedrooms and double bedrooms with shared washrooms. Ontario provides more day-care services in its facilities than other provinces.

There are a number of ethnic groups in the province which initiate their own facilities with particular cultural and linguistic characteristics. In rural areas, however, facilities tend to be more church-affiliated rather than ethnic-oriented.

In northern areas the difficulties of providing housing with care are complicated by high construction costs, isolation and sparse settlement, and facilities tend to be centralized. It is now being recognized, however, that the elderly would prefer to remain in their own communities.

Manitoba and Saskatchewan
Though individual provincial policies vary considerably, Manitoba and Saskatchewan share a multi-level care philosophy. Personal care homes in Manitoba provide care from Levels I to IV, often including chronic care, while special care homes in Saskatchewan provide Levels I to III. The two provinces have the lowest incidence of Level I care in facilities of all provinces.

The average size of facilities is 60 to 100 beds. At least 85 per cent of resident rooms are single bedrooms, some with private washrooms. They are generally one to two storeys with a few high rise facilities. Significant numbers have day-care centres. In Manitoba the majority of residents in facilities live there until death, but in Saskatchewan less than one quarter do. No hostels are built in Saskatchewan for elderly tenants, and the hostels built in Manitoba are being converted to low-level care facilities. Personal care homes in Manitoba are often combined with self-contained facilities or hospitals in sparsely populated rural areas, whereas in Saskatchewan facilities are wholly separate.

In rural communities there is a great deal of support for senior citizens' facilities from the local service clubs. In the north, the elderly tend to remain with their families. Métis and Indian groups continue to have low life expectancies, with few surviving into old age. They are also less inclined to be cared for in institutions than are other sectors of the population. In southeastern Manitoba there is a large population of old people "living in the bush" whose needs for care and service are not yet being met.

The Prairies have a pattern of strongly ethnic settlements in rural areas. It is common for people to bypass the nearest facility in favour of one located further away but of the same ethnic group.

Both provinces face similar problems in providing services to isolated, sparsely-settled areas.

Alberta

There is a high proportion of elderly persons in the population of Alberta, particularly in outlying towns. Almost 70 per cent depend on the Guaranteed Income Supplement and Old Age Pension as their *only* source of income. The present elderly are primarily of rural background, though this is expected to change in the future to a population with more urban experience with different attitudes and expectations. At the same time, there is a large influx of young people from other provinces due to the expansion of industry.

There are a number of strongly ethnic-oriented groups in the province which develop facilities for their elderly. In northern frontier areas there is not a great need for care facilities since few elderly remain there, with the exception of the Indian population. As in other northern areas, this group does not find institutional care acceptable. Cultural patterns dictate that they be cared for by their own families.

The greater number of nursing homes in Alberta are proprietary, or private, facilities, generally offering Level II care and some Level III. Extended care beds (Levels III and IV) are in great demand. Level I care is provided in the lodges (hostels) developed by the Alberta Housing Corporation.

Outside of Edmonton, which has several high-rise facilities, the average size of facilities in Alberta is one-storey, with 50 to 60 beds, the majority in double bedrooms. Many facilities in Alberta are connected to higher-level care homes or auxiliary hospitals with shared staff and services.

Alberta and B.C. have the highest resident-to-staff ratios in Canada, with almost twice as many residents to one full-time staff member as most other provinces. This is related to levels of care permitted in CMHC-funded facilities, and the use of shared resources.

British Columbia

The elderly population of British Columbia is a relatively independent group. Many elderly persons do not desire sheltered living unless they need care. The elderly tend to relocate from the interior of the province to more settled areas where services are more readily available. This is beginning to change as the more isolated areas develop and improve their own services. Many smaller communities are in a continually changing state regarding work opportunities (mining and other government projects), so that housing needs fluctuate.

Ethnic groups in British Columbia often form non-profit housing societies to build facilities for their elderly. Dominant ethnic groups are British, German, middle-European and Japanese.

The bulk of B.C.'s population lives on the lower mainland and the tip of Vancouver Island, while other areas are very sparsely populated. In these outlying areas, housing with care is often connected to the local hospital, or a Level I and II facility is adjoined to a Level III and IV (extended care facility), as the most economical solution. This type of adjacency appears quite successful.

Facilities being built at present provide Levels I and II care. Level III care has a health classification which precludes CMHC funding and extended care facilities for this level are built by the Ministry of Health. The maximum size for personal and intermediate care facilities is 150 residents; the average is around 60 to 100 residents. Care levels are weighted to Level I in these facilities. They are predominantly single bedrooms with private washrooms. Facilities in British Columbia are less likely to share services than any other province.

The Yukon and Northwest Territories

Information received from CMHC in the Northwest Territories indicated that no care facilities for the elderly are being built there. There are a few private nursing homes and boarding homes for elderly tenants in areas such as Yellowknife.

In the Yukon, facilities are mainly self-contained units with care services. The majority of the population in the Yukon and Northwest Territories is comprised of Indian and Eskimo groups. In the elderly population, the majority are male. These people prefer to have their own separate unit, with some care services, though some do prefer totally sheltered living with the full range of care services. Because of the cultural attachment to elderly members of the family and a free-ranging lifestyle, it is a difficult adjustment for them to accept institutionalization.

The Yukon and Northwest Territories have had to lower the age limit in care facilities to 55 years of age, as the life expectancies and the aging process in their populations are different from the Canadian norm.

Appendix C Glossary of Terms

Terms from Provincial Legislation

Activities of daily living: include personal hygiene, dressing, grooming, meal preparation, taking medication, and other activities

Ambulatory: independently mobile, with or without mechanical aids or assistance

Applicant: person who applies for a licence under an act

Board: a board of directors established under a particular act or regulation

Care: includes nursing, personal or supervisory care or any combination thereof, required by persons for reasons of age, infirmity, or mental or physical disability

Care staff: includes registered nurses, nursing assistants and any others engaged in providing care, excluding dietary, laundry and maintenance staff

Charitable institution: any benevolent institution which gratuitously admits, keeps, cares for, hospitalizes or assists needy persons, recognized as such by the province

Elderly person: a person of advanced years (65 or over) not suffering from incapacitating chronic disease

Facility, residential care facility: any building where supervisory care or personal care is provided for residents

Home: a home for elderly persons, or a rest home, maintained by persons other than the residents

Homes for special care: any facility providing nursing, residential, sheltered or supervisory care for persons who, by reason of age, need, infirmity, blindness or other incapacity are unable to fully care for themselves

Hospitalization: the admission, custody, care and maintenance of any needy or infirm person in a hospital, sanatorium or public charitable institution

Hostel: a building used to provide lodging for several elderly persons who require minimal assistance and supervision in daily living, where there is some sharing of kitchen or bathroom facilities

Inspector: a person in the public service, appointed by the minister as an inspector for the purposes of a particular act or regulation, often with a health officer function

Licence, Licensee: a licence issued pursuant to a particular act; an individual or group holding such a licence

Local board: a local licensing board for community care facilities

Minister: the member of an executive council charged with administration of a particular act; for the purpose of this study, usually the minister of a department of health, welfare or social services

Municipality: a city, town, village, county, rural municipality, regional or municipal district, or special area under local government

Needy person: one who is indigent, i.e., unable temporarily or permanently to provide for self maintenance

Nursing care: considerable assistance with the personal activities of daily living as well as periodic health care provided by trained nursing professionals

Nursing home: any premises maintained and operated for persons requiring accommodation and skilled nursing care, excluding certain facilities specified by individual provinces

Operator: a person, firm, corporation or association that operates a home

Other food service: in a care facility, the operation which provides meals to residents, including menu planning, food purchasing, food storage and preparation, serving of meals, space and equipment requirements, and sanitation

Patient or infirm person: a person 18 years of age or over, unable to provide for or care for himself because of mental or physical disability or illness, and needing the care or supervision of another person

Personal care: assistance in performing the activities of daily living such as personal hygiene, dressing and grooming, as well as provision of room and board

Personal care home: a building accommodating persons who require continual or intensive assistance and supervision in their daily living

Private hospital: institutions other than public charitable institutions, in which, for payment, patients are treated for any cause whatsoever

Recreational activities: includes the planned use of all available resources to meet the needs of residents of the province for recreation during leisure hours

Registered or graduate nurse: any person who qualifies for registration under the various provincial nursing associations acts

Regulations: regulations made under a particular act

Resident: a person residing in a facility that provides some degree of supervisory, personal or nursing care

Semi-ambulatory: independently mobile with mechanical aids but without assistance from another person

Superintendent: a person in charge of a nursing home

Supervisory care: the guidance or supervision of the activities of daily living for persons who are ambulatory or semi-ambulatory and capable of their own personal care

Unit, elderly persons' housing unit: housing accommodation for elderly persons (often low rental) capable of self-maintenance and independent living

Welfare institution: a building used as a boarding home wherein food and lodging are provided, and often various degrees of care are furnished with or without charge to any needy person

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Builders Bulletins. Periodically published building requirements supplemental to Residential Standards.

Housing the Elderly. 1977. Guidelines covering many aspects of senior citizens' self-contained accommodation.

Housing the Handicapped. 1977. Design details relating to physical handicaps for all age groups.

Safety in the Home. 1977. Some of the hazards commonly found in and around the home. Contains many useful references applicable to care facilities.

Site Planning Criteria. 1977. Standards and guidelines for location of projects, amenity provisions, setbacks and distances between buildings, landscaping, etc.

The Use and Design of Space in the Home. 1977. Recommendations on unit and room sizes with designs based on furniture sizes, required circulation spaces, etc.

National Building Code (1977)

National Building Code (1977) requirements should be cross-referenced to prevailing provincial codes as well as to these guidelines in determining solutions.

National Building Code References
Part 3: Use and Occupancy

3.1.2

Subsection 3.1.2. tables indicating use and occupancy classifications
Chart on fire separation for various occupancies
Fire-resistive ratings and descriptions of non-combustible construction
Fire separation tables
Fire walls
Interior finishes
Occupant loads
Use of floor areas and area allocation table for various uses.

3.2.2

Building size and construction relative to occupancy
Class B-2 occupancy fire protection tables
Class C occupancy fire protection tables
Fire alarm and detection systems
Fire fighting provisions
Emergency electrical power
Provisions for physically handicapped persons
Lighting levels, including emergency lighting
Alarm systems
Exit requirements
Sprinkler systems, general
Exhaust systems, general
Interior finishes
Safety requirements, general
Storage of hazardous substances
Kitchen exhaust systems
Access to exits
Doorways to exits
Width of corridors providing egress
Flame spread ratings
Height of guards at stairs, etc.
Institutional occupancy, general
Residential occupancy, general

3.3.3

Institutional occupancy, general

3.3.4

Residential occupancy, general

3.4

Requirements for exits
- Exits, general
- Types of exits, description
- Horizontal exits
- Fire escape
- Required number of exits
- Distance of travel
- Exit widths
- Flame spread ratings
- Fire separation for exits
- Glazing in exits
- Exits through lobbies
- Exit stairs
- Exit signs
- Finishes on stairs, etc.
- Handrails in exits
- Windows in exits
- Guards in exits
- Ramps, lengths and gradients
- Stairs and headroom clearance
- Direction of travel
- Doors and hardware

3.5

Service rooms and areas
- Fire separation requirements
- Fire protection
- Incinerators
- Transformer vaults
- Flame spread ratings
- Horizontal service spaces

3.6

Health requirements
- Clear height of rooms
- Windows
- Ventilation
- Plumbing facilities

Design Issues Identified in Provincial Legislation

Design Issue	Province or Territory										
	Nfld.	N.S.	P.E.I.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon/ N.W.T.
Size				o		o			o	o	
Location/Site Planning				o		o			o	o	
Bedrooms			o	o		o			o	o	
Nursing Care Units and Nursing Stations				o		o			o		
Bathrooms			o	o		o			o	o	
Dining Areas				o		o			o	o	
Social/Activity Areas				o		o	o			o	
Kitchens				o					o		
Laundry				o		o				o	
Housekeeping						o			o		
Admin. Offices				o				o			
Staff Facilities				o		o			o		
Other Areas			o	o		o			o	o	
Corridors				o		o				o	
Ramps				o		o			o		
Stairways				o		o			o		
Doorways				o		o			o	o	
Elevators				o		o			o		
Floors				o					o		
Walls									o		
Ceilings				o		o			o		
Lighting			o	o		o			o	o	
Heating, Ventilation and Air Conditioning			o	o		o			o		
Waste Disposal						o			o		
Windows			o			o	o		o	o	
Finishes						o					
Furnishings/Equipment						o			o	o	
Fire Safety			o			o					
General Safety			o			o					
Call/Alarm (Other than fire)						o					

o indicates specific mention in legislation.

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